STATE OF MINNESOTA DISTRICT COURT
COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT
- - - - - - - - - - - - - - - - - -
The State of Minnesota,
by Hubert H. Humphrey, III,
its attorney general,
and
Blue Cross and Blue Shield
of Minnesota,
Plaintiffs,
vs. File No. C1-94-8565
Philip Morris Incorporated, R.J.
Reynolds Tobacco Company, Brown
& Williamson Tobacco Corporation,
B.A.T. Industries P.L.C., Lorillard
Tobacco Company, The American
Tobacco Company, Liggett Group, Inc.,
The Council for Tobacco Research-U.S.A.,
Inc., and The Tobacco Institute, Inc.,
Defendants.
- - - - - - - - - - - - - - - - - -

TRANSCRIPT OF PROCEEDINGS
VOLUME 29, PAGES 5472 - 5677
FEBRUARY 27, 1998

P R O C E E D I N G S.

THE CLERK: All rise. Ramsey County District Court is again in session, the Honorable Kenneth J. Fitzpatrick now presiding.

(Jury enters the courtroom.)

THE CLERK: Please be seated.

THE COURT: Good morning.

(Collective "Good morning.")

MR. HAMLIN: Good morning.

(Collective "Good morning.")

TIMOTHY S. WYANT

called as a witness, being previously sworn, was examined and testified as follows:

DIRECT EXAMINATION (cont'd)

BY MR. HAMLIN:

Q. Good morning, Dr. Wyant.

A. Good morning.

Q. At the close of the day yesterday we were talking about variability of estimate -- of statistical estimates. Could you give the jury some perspective for the testimony that is to come. Could you tell us again what "variability of statistical estimates" means?

A. Well what we're talking about here is the fact

that, in part, our estimates rely on national surveys, the National Medical Expenditure Survey and the National Health and Nutrition Survey, and these

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Tobacco Industry Documents Library http://tobaccodocuments.ucsf.edu/docs/lsgd0001

surveys are not taken of everybody in the United States, they're only taken of samples of 35,000 people, approximately, for the Medical Expenditure Survey, and 40,000 some people for the National Health and Nutrition Survey. So if the federal government had -- had used the same procedures and gone out and selected a different set of 35,000 people, say, for the National Medical Expenditure Survey, and we had used that different set, then we would have calculated a somewhat different estimate of total smoking-attributable expenditures in Minnesota based on that other possible sample.
Q. Is there a statistical measure of variability that is most appropriate here?
A. Yes, I think so.
Q. And what is that?
A. That's what I would call the relative error.
Q. With the court's permission, could you come down to the flip chart and list the relative errors in the plaintiffs' statistical model.
A. Well the plaintiffs' statistical model is broken into several parts.

Q. Why don't we talk about major smoking-attributable expenditures first.
A. Okay. Major smoking-attributable expenditures is the first part, and we can look at the estimated relative error, and for that category, that number is 41 percent.
Q. What does that percentage mean?
A. What that percentage means is that if the federal government, the Agency for Health Care and Policy Research, had gone out and repeated the NMES survey a number of times, about two times out of three from those various replications of that survey, if we applied all of our same methods to calculating smoking-attributable expenditures using those different surveys, about two times out of three our estimates would fall within plus or minus 41 percent of the actual estimate that we've presented.
Q. Using that 41 percent, what is the range of dollars from low to high?
A. On that range, if we look at our estimate, which was 558 million, that range goes from 328 million to 788 million.
Q. What is that range called?
A. The name for that range is -- is a confidence interval. That's what that's called in statistics.

Q. What is the most probable estimate of the smoking-attributable expenditures for major smoking-attributable expenditures?
A. The most probable estimate is the estimate that we calculated from the survey that was actually conducted, it's 558 million dollars for major smoking-attributable disease expenditures.
Q. Can you put up the other relative errors for the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

other parts of the model.
A. Sure.
The estimated relative error for the major diseases is 41 percent; reported poor health -- now we're talking about diminished health status -- 42 percent; for other diminished health, 154 percent; and for nursing homes, 176 percent.
Q. Now if you could flip the page back to the major smoking-attributable diseases, now is the relative -- or excuse me. Is the major smoking-attributable diseases based on the NMES survey?
A. Excuse me?
Q. Yeah. Is the estimate for the major smoking-attributable diseases based on the NMES survey?
A. Well it's based on the NMES survey as well as the claims records and the other data sources we

talked about, and the NMES survey that was conducted in 1987 is one of those sources.
Q. Now what NMES sample of the population did you use in calculating the smoking-attributable expenditure of 558 million?
A. The NMES survey we used here was the NMES survey of 35,000 people that was conducted in 1987.
Q. Now flip the chart back to your other list.
Can you tell us what these other relative errors mean.
A. Well all of these relative errors are interpreted in the same way as the relative error for major smoking-attributable diseases for the different groups.
Q. Now let me place underneath the easel Plaintiffs' Exhibit 30203, which has been previously admitted, and that's the state expenditures attributable to smoking by disease category for the full model 1978 to 1996. Do you see that?
A. Yes.
Q. Now let me direct your attention to the list of percentages for estimated relative error on your flip chart.
Now is there anything significant about the pattern of those percentages?

A. Well, yes. One of the reasons for calculating relative errors and one reason they're valuable is to show us in which part of our calculations there's more variability and which parts there's less, and there are two or three things that impact on that. One of the things is: What are you shooting for? In studies like this, if you're looking at only something like a three percent increase in nursing home expenditures --
Q. Perhaps you ought to put that on the easel. Yeah.
A. If we're looking for only a three percent increase, it's more difficult to estimate that with a

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://www.industrydocuments.ucsf.edu/docs/lsgd0001

great deal of precision, and we see that the relative error term is much larger down here. Similarly, when we go up to the other effects of diminished health and the effect we're looking at is only a four percent increase based on our best estimates, the four percent smoking-attributable expenditure, again we have a larger relative error than we see up here.

Now when we get up to reported poor health, we still have a small percentage we're shooting for, five percent when we're talking about what came out in our best estimate calculation, but now the epidemiology, another factor, is coming into play.

We've taken advantage using the data of the basic notion from Dr. Samet that smoking causes disease which results in health-care costs. In diminished health we have a pervasive kind of disease, according to Dr. Samet, one not readily captured by specific ICD-9 codes, but one that can in part be addressed by reported health status, such as was collected in the National Medical Expenditure Survey, and if we can get additional information like that about disease, we see that the relative error is much smaller than it was for these other groups.

And then when we get up to major disease, we see the same pattern in that the relative error is again much smaller. We're making use of the disease information and the claims data and we're tracking the epidemiology, and we're looking for effects that are bigger based on our estimates of what the smoking-attributable expenditures were.

Q. Now based on your experience, how do these relative errors in the plaintiffs' statistical model compare with relative errors that you've encountered in your work in similar cases?

A. Well in my work in similar cases, estimating total dollars in damage calculations and -- and particularly for -- for products that cause injury,

most of the time no relative error is even calculated in my experience, and most of the time in fact people can't calculate the relative error because they don't have surveys of the quality of the National Medical Expenditure Survey that would allow them to do that. They're working from much less reliable sources of information.

The places where typically -- it's very unusual, but where I do see people making something like a relative error estimate in damage calculations, it's usually more of an educated guess. And in particular in -- in the asbestos proceedings in New York, demographers trying to estimate the total number of future claims against Johns-Manville Corporation, they started guessing at -- when they got to about -- they could say about a hundred percent was their calculation based on just some other assumptions. It wasn't a statistical calculation like the ones we're

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://www.industrydocuments.ucsf.edu/docs/lsgd0001

presenting here.
So typically you don't even see these calculations. People calculate these estimates from data which don't even allow this calculation, and educated guesses, when -- on the occasions when an expert is willing to do that, fall right in this range.

Q. Okay. Thank you. You can go back to the stand.
Now if you made the same calculation of error for nursing homes that you did for major smoking-attributable diseases, what would the upper range reach?
A. It would be over 700 million dollars.
Q. Would the lower range reach zero?
A. Yes, it would.
Q. What is the likelihood of the actual smoking-attributable expenditure for nursing homes being zero or less?
A. Based on our work and the medical foundation from Dr. Samet, it's impossible for that to happen. The only way nursing home expenditures, smoking-attributable nursing home expenditures could be negative is if nursing homes were paying the state to take care of people, and I think we know that is not a likely thing to happen. What would have to happen for smoking-attributable expenditures to be zero -- well one thing that would have to happen is that, going back again to the medical foundation from Dr. Samet, smoking causes stroke and strokes can cause conditions that result in nursing home entry if the stroke is severe enough.
Now one thing that would have to be true if

there were no smoking-attributable expenditures in nursing homes in Minnesota during this period is that not one single person over this period from 1978 to 1996, with all the tens of thousands of people going into nursing homes in Minnesota and being paid for by Medicaid, that not one single time was that nursing home admission from a stroke caused by smoking that resulted in disabilities sufficient to cause nursing home entry. That's one thing that would have to be true. That couldn't happen ever once over this entire time period. In addition, there could be no other condition such as lung cancer causing a period of rehabilitation in the nursing home, that couldn't happen once either over this entire 19-year period. And only if those things are true could the smoking-attributable expenditures for the state for nursing homes from 1978 to 1996 be zero. And the numbers are such and the percentages are such that it's just impossible for that to happen.
Q. What is the most likely estimate of the smoking-attributable expenditure in nursing homes?
A. Two hundred sixty million dollars.
Q. Now that's not a guess; is it?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Tobacco Industry Documents Library http://industrydocuments.ucsf.edu/docs/lsgd0001

A. No, absolutely not. That's a result of applying our models to the actual claims data and the actual

Behavioral Risk Factor Survey data and the actual NHANES survey that was conducted from 1970s through 1992.

Q. And in doing that, you used statistical practices?

A. Yes.

MR. BIERSTEKER: Objection, Your Honor, leading.

THE COURT: It is leading.

Q. Well in doing that, can you tell us what some of the standard statistical practices are that you used?

A. We used standard practices such as the method of attributable risk, the method of maximum likelihood, and those are the methods that were incorporated into the models applied to nursing homes damages.

Q. Now are any of the smoking-attributable expenditures that you discussed yesterday guesses?

A. No.

Q. Why is that?

A. They're all the results of the application of accepted statistical methods to the best available data for this population.

Q. Now with respect to the most likely estimate of smoking-attributable expenditures in nursing homes, what --

Well let me ask you first: What was that estimate based on in terms of a database of surveys?

A. Well that estimate, in terms of surveys, was based on the one actual NHANES survey that was conducted. We have talked earlier about hypothetical surveys that could be done if you were going to do this over and over again, but of course the federal government hasn't done that. Nobody's done that.

The NHANES survey on which we based the nursing home estimate is the one survey that we have, and we used all the data that's appropriate from that survey.

Q. Now what NHANES sample of the population is the range estimate of zero based on?

A. That's based on a hypothetical survey which has never been taken.

Q. Let's turn now to diminished health other effects. I believe the relative error that you have listed on the chart is 154 percent. Do you see that?

A. Yes.

Q. Now what would you expect to see in small groups in a category such as this?

A. Well in this category we see a larger relative error, and in that situation you'd expect to see more fluctuation across small groups like the kind we were

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

seeing in the skate board example yesterday.
Q. What is the most likely smoking-attributable expenditure for diminished health other effects?
A. Four hundred seventy-seven million dollars.
Q. Now is diminished health other effects based on the NMES survey?
A. Yes.
Q. What NMES sample of the population did you use in calculating the smoking-attributable expenditure for diminished health mixed effects?
A. The actual sample that was taken of 35,000 individuals in 1987.
Q. Well let me ask you about the other estimates in this range for diminished health other effects, apart from the 477 million. What sample would they be based on?
A. Again, anything other than the 477 million are based on estimates of what would happen if in some hypothetical sense the survey were redone with a different set of people.
Q. What would it cost to do another NMES sample?
A. Tens of millions of dollars.
Q. Are you aware of any authority on damage estimates that discusses confidence intervals that reach zero?

A. Yes.
Q. Let me direct your attention to Trial Exhibit 24046, a full copy of which is on the ledge next to you, and it's -- you've also got a copy in your demonstrative notebook. No, sorry, in the testimony notebook.
Do you have that in front of you?
A. Yes, I do.
Q. Can you identify that.
A. That's a book called "The Evolving Role of Statistical Assessments as Evidence in the Courts."
Q. And can you identify the editor.
A. The editor is Dr. Stephen Fienberg.
Q. Have you reviewed this particular book in the course of your work in this case?
A. Yes.
Q. And do you find it a reliable authority in the published scientific literature?
A. Yes.
MR. HAMLIN: Your Honor, we offer Trial Exhibit 26046 as a learned treatise under 803(18).
MR. BIERSTEKER: No objection, Your Honor.
THE COURT: Is it 26 or 24? I've got two -- I have two numbers.
MR. HAMLIN: It's 26046.

THE COURT: Court will receive 26046.
BY MR. HAMLIN:
Q. Now Dr. Wyant, could you turn to the page marked "PANEL ON STATISTICAL ESTIMATES AS EVIDENCE IN THE

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

COURTS?" Do you have that?
A. Yes.
Q. And could you --
MR. BIERSTEKER: What page number is that?
MR. HAMLIN: Let me make sure. It's in the first portion of the book. I'm not sure that it has a page number. But if you open it, the first two or three pages, panel members there are listed. Have you got that?
Q. Dr. Wyant, can you tell us what's on that page.
A. This book is a product of a panel. This panel was funded by the National Science Foundation, and the panel is Panel on Statistical Assessments as Evidence in the Courts, and Stephen Fienberg is one of the chairs of the panel, and this panel includes some of the leading names in statistics and economics, including Dr. Samuel Krislov at the University of Minnesota, Dr. James Heckman at the University of Chicago, and it also includes jurists such as Judge Weinstein in -- in New York.
Q. Where is Dr. Fienberg from?

A. Dr. Fienberg, I believe, is still at Carnegie Mellon University.
Q. And is he in their department of statistics?
A. Yes.
Q. Now what does this book advise about damage estimates which have confidence intervals that reach zero?
A. Well this book says -- which is in agreement with my experience that I described earlier -- that the focus in damage estimates is on calculating the best estimate of damages. It's not unusual that any kind of confidence interval would reach zero, and it really doesn't matter if that happens because the focus, again, is on providing a best estimate, which is exactly what we've done with our models here.
THE COURT: Excuse me.
MR. BIERSTEKER: Your Honor, I would ask if the witness is going to say what the book says, that we be given a page reference instead of just a characterization.
THE COURT: Can we -- can we cite to a specific page?
Q. Can you cite to a page? I believe it's in your excerpt there.
A. Pages 114 to 115.

Q. Now are there additional sources of expenditures of the state of Minnesota and Blue Cross Blue Shield of Minnesota that you did not consider in plaintiffs' statistical model?
A. Yes.
Q. And have you prepared an exhibit of these sources of expenditures?
A. Yes.
Q. Can you turn to Trial Exhibit 30207. Is that

http://legacy.library.ucsf.edu/tid/gfn05a00/pdf
Generated from the Industry Documents Library at industrydocuments.ucsf.edu/docs/lsgd0001

the exhibit?
A. Yes, it is.
Q. Can you identify it by title.
A. The title is "The Statistical Model is Lower Than Actual Expenditures."
Q. And was this prepared at your direction?
A. Yes.
MR. HAMLIN: Your Honor, plaintiffs offer Trial Exhibit 30207 for illustrative purposes.
MR. BIERSTEKER: No objection on that basis, Your Honor.
THE COURT: Court will receive 30207 for illustrative purposes.
BY MR. HAMLIN:
Q. Dr. Wyant, I've placed Trial Exhibit 30207 on the easel, and can you describe that exhibit for us.

A. Yes. This lists several categories of expenditures that are not included in the statistical model, they're not addressed by any of the estimates that I've talked about until now, and these include any estimates for any smoking-attributable expenditures that might be related to secondhand smoke effects. The Environmental Protection Agency, for one example, has issued reports about secondhand smoke and in particular has talked about effects on asthma in children. The entire focus of our statistical model has been on adults, and we have not attempted to calculate any smoking-attributable expenditure estimates for children under the age of 19.
Another category which is not addressed in our model in which there may be smoking-attributable expenditures is the category of increased health-care costs for babies whose mothers smoke during pregnancy. Again, there are estimates in the scientific literature of the total medical costs attributable to smoking due to premature and low-birth-weight babies, but we have not attempted, again, to estimate any smoking-attributable expenditures in our model for anyone under the age of 19.

In our Blue Cross Blue Shield claims data we have looked at rated-fee-for-service plans, but we have not looked at any of their rated HMO plans. We have not looked at expenditures for our government program Minnesota Care.
Q. Let me stop you there, Dr. Wyant. What do you mean by HMO?
A. By that I mean health maintenance organization, managed care plans. That's a different set of Blue Cross business, a different way they can cover rated groups for an employer or a union.
Q. Let's go on to the next bullet point.
A. There's another state plan, Minnesota Care, the model does not address expenditures for Minnesota

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacydocs.library.ucsf.edu/docs/lsgd0001

Care. And finally, the state expended money for health care coverage of its own employees, and except for a couple of years in which those employees were covered by Blue Cross Blue Shield rated plans, the plans that were in our statistical model, we have not addressed any smoking-attributable expenditures that may have occurred among the state's employees.
Q. Why didn't you address any of these sources?
A. Our focus was on getting the most reliable estimate we could for a reasonable part of the smoking-attributable expenditures of the state and of

Blue Cross, and to have gone out and tried to collect additional data and additional information and made additional estimates in these other categories would not have let us make the estimates that we did make to the same degree of reliability.
Q. What if any check of plaintiffs' smoking-attributable expenditures have you done by using sensitivity tests?
A. We spoke of one yesterday involving the National Medical -- excuse me, the National Health and Nutrition Examination Survey in the nursing home estimates where we looked at an age range of 60 to 90 as opposed to 55 to 95.
Q. What if any checks have you done of plaintiffs' smoking-attributable expenditures by comparing them to studies of disease mortality?
A. Again, we --
MR. BIERSTEKER: Objection, Your Honor, I think we went over this at some length yesterday. Asked and answered.
MR. HAMLIN: Your Honor, this is just a summary, and it lays some foundation for the next question.
THE COURT: All right. I'll allow it just for that purpose.

MR. HAMLIN: Okay.
THE COURT: I don't expect us to go over it again.
A. Yes, we talked about those yesterday.
Q. And have you checked the plaintiffs' smoking-attributable expenditures by comparing them to other studies of health-care costs for diseases caused by smoking?
MR. BIERSTEKER: Same objection, Your Honor.
MR. HAMLIN: And again, Your Honor, we're not going to go over it, it's just a foundational question.
THE COURT: Okay. You can answer it. You may answer.
A. Yes, yesterday we looked at comparisons with the Chrysler study and the Framingham study as two examples.
Q. Have you done any other checking?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from the Tobacco Industry Documents Library at UCSF: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

A. Yes.
Q. What is that?
A. Well one important check involves a comparison for the major smoking-attributable diseases of the results we get from the refined model with the results that Professor Zeger described for the core

model, the simpler model that also addressed smoking-attributable expenditures for the major smoking-caused diseases.
Q. Do you have an exhibit setting out that comparison?
A. Yes.
Q. Can you turn to Trial Exhibit 30189. Is that the exhibit that sets out the comparison of the core model results and the partial full model results?
A. Yes.
Q. Okay. Was that prepared at your direction?
A. Yes, it was.
MR. HAMLIN: Your Honor, plaintiffs offer Trial Exhibit 30189 for illustrative purposes.
MR. BIERSTEKER: No objection, Your Honor.
THE COURT: Court will receive 30189 for illustrative purposes.
BY MR. HAMLIN:
Q. Dr. Wyant, I've placed on the easel Trial Exhibit 30189. First of all, can you tell us the title of the exhibit.
A. The title of the exhibit is "Comparison of Core Model to Refined Model, Costs for Major Smoking Attributable Diseases."
Q. Can you tell us what we see on the exhibit.

A. Again, the smoking-attributable diseases are divided into two categories, the first being lung cancer/COPD, and in the core model described by Professor Zeger there was an estimate of 243 million dollars in smoking-attributable expenditures for lung cancer and COPD. With the refined model that same estimate, that corresponding estimate is 206 million.
The other group of major smoking-attributable diseases is the one we call CHD/stroke that has the other ICD-9 codes in Dr. Samet's list for the major diseases, and the estimate from Professor Zeger's core model is 383 million dollars. And the corresponding estimate for the refined model that I've talked about yesterday and today is 352 million dollars.
Q. Now can you tell us what the total expenditures are for the core model for lung cancer/COPD and the CHD/stroke category which includes other major smoking-attributable diseases.
A. The total for the core model for these two groups of major smoking-caused diseases is 626 million dollars.
Q. And can you tell us the total for the refined model of the lung cancer/COPD category and the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lsgd0001

CHD/stroke category.

A. Yes. That total is 558 million.
Q. Now is that 558 million a part of the 1.77 billion of plaintiffs' total smoking-attributable expenditures?
A. That's correct.
Q. Prior to reaching your smoking-attributable expenditure -- or that is, the plaintiffs' smoking-attributable expenditure of 1.77 billion, had you reached any other results for the state and Blue Cross Blue Shield of Minnesota?
A. Yes.
Q. What results did you reach?
A. In an analysis completed about June of 1997 we calculated an estimate of 1.42 billion.
Q. And how did you arrive at that estimate?
A. To arrive at that estimate we had had to make a choice between basically two statistical methods, both accepted, one called testimation and one called full model, and at that time we used the testimation method to arrive at the 1.42-billion-dollar figure.
Q. Can you tell us about the testimation method.
A. That involves going into subgroups and making decisions within each subgroup as to what factors to retain in the formulas that are used to calculate the three reductions.

Q. And can you characterize that as conservative?
A. Yes.
MR. BIERSTEKER: Objection, leading.
THE COURT: It is leading.
Q. How would you characterize that approach?
A. One difference between the testimation and the full model approach is that the testimation approach in this situation is likely to be very conservative.
Q. And why? Why is that?
A. Well it's --
The testimation approach does not make use of the law of averages and it does not make efficient use of all of the information across small subgroups, particularly with respect to key factors in this kind of model such as the effect of smoking on different expenditures as we go through the various formulas, and the real effects that you can see, consistent effects of smoking across subgroups, are in some cases discarded by the testimation approach.
Q. Why did you use it?
A. Well both approaches are accepted approaches in statistics, and one of the decision criteria that we used in deciding among approaches was that if there were two approaches that were reasonably similar, we would make a judgment to go with the one that was

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lsgd0001

more conservative.
Q. Well after getting these first results, why did you switch to the full model approach?
A. Well experts for the defendants suggested that using the testimation approach resulted in some formulas that were arbitrary, and at that time we -- prompted by that, we revisited and relooked at the issue and determined that, indeed, we were not making full use of all the information in the population, we were relying too much on small subgroups. In addition, there were technical reasons involving estimation of relative errors that made the full model approach preferable to the testimation approach. And so we used the full model approach to calculate the 1.77 billion dollars that we've talked about yesterday and today.
Q. Which of these two results is the most reliable?
A. The 1.77 billion dollars.
Q. And that's using the full model approach?
A. That's correct.
Q. Dr. Wyant, have you presented a description of the data, the most important statistical methods, and the main principles underlying the model?
A. Yes.
Q. Have you presented all of the details of the

model in your testimony?
A. No.
Q. What --
Can you give us an example of what you didn't tell us?
A. Well, for example, we didn't go over in detail all of the aspects of the bivariate probit maximum likelihood fit for probability of smoking compared to probability of having coronary heart disease, for one example.
THE COURT: For which we're very happy.
(Laughter.)
Q. How long did it take you and your colleagues, Dr. Zeger and Dr. Miller, to build this model?
A. Something over two years.
MR. HAMLIN: Your Honor, I have no further questions of Dr. Wyant at this time.
MR. BIERSTEKER: Your Honor, if we could have a few minutes just to move things around, that would be appreciated.
THE COURT: Why don't we take a short recess now.
THE CLERK: Court stands in recess.
(Recess taken.)
THE CLERK: All rise. Court is again in

session.
(Jury enters the courtroom.)
THE CLERK: Please be seated.
MR. BIERSTEKER: Good morning. You may not remember me, I'm Peter Biersteker and I represent R.

http://legacy.library.ucsf.edu/tid/gfn05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

J. Reynolds Tobacco Company.

CROSS-EXAMINATION

BY MR. BIERSTEKER:

Q. Good morning, doctor. It's nice to see you again.

A. Good morning.

Q. Doctor, what you set out to do was to estimate the amount of money that the plaintiffs expended from 1978 to 1996 to purchase smoking-attributable health-care services; right?

A. I believe that's correct.

Q. And you would agree with me, wouldn't you, that smokers might have higher total medical-care expenditures than non-smokers for reasons that have nothing to do with their smoking?

MR. HAMLIN: Objection, it's assuming facts not in evidence.

THE COURT: You can answer it if you know.

A. In some circumstances, sometimes, I assume that that is possible that can happen.

Q. And for that reason, you would agree with me, wouldn't you, that to estimate health-care costs attributable to smoking requires a comparison between average expenditures for smokers and never smokers, all other things equal?

MR. HAMLIN: Objection to form, vague.

THE COURT: You may answer.

A. Well I think a calculation of that sort is needed as long as it's within an appropriate framework, taking into account disease and other factors in the way such as we have done in our statistical model.

Q. You would agree, wouldn't you, that it was a goal in your statistical model to compare like to like?

A. That was certainly one goal.

Q. But we know that all other things aren't the same as between smokers and non-smokers; don't we?

A. Well we suspect that that may be the case, and that's one reason to use other factors in the model so that to a reasonable degree we can be sure that we're comparing like to like.

Q. And in fact we know that smokers and non-smokers differ in many ways that your model doesn't consider; isn't that true?

A. I don't know that that's true after adjusting for the factors that we have in our model.

Q. Doctor, why don't you turn to tab 37 in your book, please.

MR. HAMLIN: Do you have a trial exhibit number?

MR. BIERSTEKER: Yes, that's Exhibit No. BYT000271, already admitted into evidence.

A. I'm sorry, I --

Q. You don't have a copy?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. I may have, but I'm not quite sure where to look for it here.
Q. Well let's see if I can help you.
A. This?
Q. Yes. It should be at tab 37.
I think you've got the wrong volume there, doctor.
A. I'm sorry. So where are we?
Q. This is an article by Dr. Samet; isn't it?
A. This is an --
Are we talking about "Editorial Commentary: New Effects of Active and Passing -- Active and Passive Smoking on Reproduction?"
Q. That's correct.
A. Yes. Yes.

Q. It is written by Dr. Samet; isn't it?
A. Yes.
Q. All right. If you could turn to page 349, please, and I would direct your attention to the second full sentence on that page. Do you see that? Do you see it, doctor?
A. Yes.
Q. And doesn't Dr. Samet say, "As the prevalence of smoking has declined, smokers have become increasingly distinct from nonsmokers in other aspects of life-style as well. Smokers today tend to have less education and lower income, to drink more alcohol, and to follow a less healthy life-style than nonsmokers."
Did I read that correctly, sir?
A. You read that correctly.
Q. And didn't the Surgeon General also in his 1989 report indicate that there were differences between smokers and non-smokers?
MR. HAMLIN: Objection, Your Honor. Could we have a page number so we can know what he's talking about?
THE COURT: Can you cite us?
MR. BIERSTEKER: Absolutely.
BY MR. BIERSTEKER:

Q. Doctor, why don't you turn to the 1989 Surgeon General's report, Plaintiffs' Exhibit 3821, already in evidence, and let's go to page 139. Have you found it yet?
A. Yes.
Q. And there's a column on that page marked "Other Changes in the Cigarette Smoking Population." Do you see that?
A. Yes.
Q. And doesn't the Surgeon General say, in the second sentence of the second paragraph under that heading, "There is some evidence that socioeconomic difference -- differentials in smoking rates have widened." Do you see that?
A. Yes. It's -- it's reasons like this that are

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lsgd0001

precisely behind the inclusion of other factors in our refined model.
Q. I see. And doesn't he say that the proportionate decline in adult smoking rates between 1965 and 1985 was the highest for people who graduated from college and the lowest for those who had not completed high school?
A. Yes.
Q. And he goes on to say that there's been a bigger decline in smoking among white collar workers than

among blue collar workers; right?
A. Yes, that's correct.
Q. And then if you skip down to the last paragraph on this page, the Surgeon General says, "Cigarette smokers have higher rates of alcohol use, are more sedentary, and are less likely to wear their seatbelts." Do you see that?
A. Yes.
Q. Now doctor, you don't know in your data set whether all things are equal between smokers and non-smokers; do you?
MR. HAMLIN: Objection, vague.
THE COURT: You may answer that.
A. I'm sorry. We don't know in our what?
Q. In your own data set whether all other things are equal as between smokers and non-smokers, other than their smoking.
A. No. What we know is we have applied reasonable and accepted methods to an extent that any statistician would say -- and certainly the statisticians in our group -- that to a reasonable degree we've compared smokers and non-smokers on a like-to-like basis.
Q. Well let's ask about some of that.
When you were building your model, did you look

in your data set to see whether smokers and non-smokers differed with respect to the rates at which they had accidents?
A. No.
Q. And if smokers have more accidents and spend more money on health care because -- to treat injuries caused by those accidents, then those dollars will not be removed by your third reduction step; will they?
A. The third reduction will -- will allocate dollars to smoking only to the extent, in all disease categories, that smokers on average compared to similar non-smokers have higher expenditures. And the way it works is in the other direction as well, to the extent there are higher expenditures for non-smokers than smokers, those are taken out.
Q. Okay. So if smokers have more accidents and spend more money on health care to treat injuries caused by those accidents, your model is going to attribute those dollars, those extra dollars, to

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

smoking; right?
A. No. It's going to make the calculation that -- that I just said. It's not going to go in and make specific attributions for specific injuries or diseases. It makes an overall calculation comparing

smokers to non-smokers.
Q. If smokers and non-smokers had exactly the same costs for everything else other than car accidents, your model -- and smokers had more car accidents and more health-care costs for that, your model would attribute those dollars to smoking; wouldn't it?
MR. HAMLIN: Objection, foundation, assuming facts not in evidence.
THE COURT: No, you may answer that.
A. Well I mean that's postulating a circumstance that doesn't -- in my experience with these data isn't remotely close to what we see there.
Q. Doctor, I'm just trying to understand how the calculation works. Can you answer the question, please.
MR. HAMLIN: Your Honor --
THE COURT: Just a moment, please. Do not instruct the witness, please.
MR. HAMLIN: I would also ask that the witness be allowed to answer the question fully.
THE COURT: And allow him to finish his answer.
MR. BIERSTEKER: Were you finished, doctor?
THE WITNESS: No. I'm sorry, I'm lost as to where we are.

Q. If smokers and non-smokers had identical medical expenditures for everything except automobile accidents, and the smokers had higher costs to treat injuries from automobile accidents, isn't it true that your model would attribute those higher costs to smoking?
A. But they don't have identical costs for everything. And one thing that you see is that they have, on average, higher costs for smoking-related conditions, which, if we're talking about auto accidents, if my understanding of Dr. Samet is correct, for example, it can cause complications of treatment in those auto accidents. That's why the importance here is comparing smokers to non-smokers on an average basis within a structure of a disease model as we've done, making reasonable attempts to compare likes to like.
Q. Can you answer the question I asked, doctor?
MR. HAMLIN: Objection, Your Honor.
THE COURT: It's argumentative.
MR. HAMLIN: I'm sorry, it was asked --
Q. Let's say that smokers cost on average a hundred dollars more than non-smokers because of lung cancer, but let's say smokers also have fifty dollars more costs because they have more automobile accidents.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Does your model attribute one hundred dollars to smoking, or 150?
A. That's such a simple excerpt, I -- I don't even know how to characterize it in terms of the model. I --
The model is what it is, and it is what I've described.
Q. If smokers have more sprained knees, I think was the example you gave yesterday, than non-smokers do, your third reduction step will not remove the extra costs for sprained knees that smokers have; right?
A. The only way that -- that sprained knees can be included as part of smoking-attributable expenditures is if, in the context of comparing smokers to non-smokers, all medical conditions, that smokers tend to have higher costs compared to similar non-smokers for sprained knees.
Q. And so if smokers have higher costs than similar non-smokers for automobile accidents, those costs will be attributed to smoking in your models; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: It's been asked and answered.
Q. Did you compare smokers and non-smokers in your data set to determine whether they differed with respect to exercise levels?

A. We made some calculations using the Behavioral Risk Factor Survey as to how exercise affected the relationship of smoking to health-care utilization.
Q. In the calculations that you did to generate your estimates, you didn't include exercise as a variable; did you?
A. Exercise was not one of the explicit factors in the refined model.
Q. Do you know what happens if exercise is added to the refined model, say for coronary heart disease and stroke?
A. I have no accurate way of doing that. And in general in these studies, I would think that's a dangerous thing to do because of the kind of synergies and over-adjustments that Dr. Samet mentioned.
Q. Did Dr. Samet tell you not to put exercise in your CHD/stroke model?
A. No, he didn't. We had many general discussions with him on the nature of these diseases.
Q. Couldn't you determine what happens in your CHD/stroke model if you add exercise just by putting it in?
A. I wouldn't know how to interpret that, so I don't know that you could tell what happens in terms

of identifying some change in smoking-attributable

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

expenditures. One of the problems is that when people get sick, they stop exercising, and what you're doing is simply taking the sickness out of the model if you put exercise in and don't do it with a great deal of care.
Q. Did you include depression in any of your models?
A. No.
Q. Do you know if smokers are more depressed than non-smokers?
A. I've seen some articles, some of which show that smoking precedes depression, some of which discusses relationships of one kind or another, but that's about the extent of my knowledge, other than that as Dr. Samet, I believe, testified to depression being a consequence of having something like lung cancer.
Q. You can be depressed for other reasons, though, too; right?
A. Sure.
Q. So your model doesn't take into account that depression; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: It's been asked and answered.
Q. Do you know what happens if depression and

exercise together are added to your CHD/stroke model?
A. Well again I wouldn't know how to even do that in any statistically meaningful way, and -- and so one result of that is I don't know what would happen with some theoretical addition of that.
Q. Well I don't understand. How could you add being overweight to your model but not know how to add exercise and depression?
A. The data are in different forms and there are different considerations in terms of medical foundation and what are in similar articles.
Q. There's no medical foundation that you know of linking exercise to health status or to health-care expenditures?
MR. HAMLIN: Objection, mischaracterizes his testimony.
THE COURT: No, you may answer.
A. No, that's not what I said.
Q. Okay. So there is a medical foundation, then, for including exercise; right?
A. No, I'm not saying there's a foundation for including exercise. Exercise may be clinically relevant, certainly, to certain conditions. That doesn't mean that including exercise in a statistical model for a population of the effect of smoking on

expenditures is a reasonable thing to do.
Q. So it's not reasonable to include exercise, but it is reasonable to include seatbelt use?
A. That was our decision.
Q. And Dr. Samet didn't tell you to do that; did he?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. No, he made no specific recommendations on individual factors of that sort.
Q. Did you compare smokers and non-smokers in your data set with respect to diet?
A. Not in our data set, no.
Q. Did you compare smokers and non-smokers in your data set with respect to injuries, the rates at which they had injuries?
A. No.
Q. Did you compare smokers and non-smokers in your data set to see which group had more mental health problems?
A. We made a calculation at one point in a sensitivity test of some mental conditions on what would happen with the model results.
Q. And what happened?
A. There was no appreciable effect.
Q. Were those results produced to us?
A. The programs would have been if we had them.

Q. Did you compare smokers and non-smokers to determine whether or not smokers were more likely to suffer from conditions caused by drug abuse?
A. Ah, we didn't make that comparison, no.
Q. Did you compare smokers and non-smokers to determine whether or not if smokers drank more heavily and were more likely to be alcoholics?
A. No.
Q. Did you compare smokers and non-smokers with respect to family history of disease in your data set?
A. In this data set?
Q. Yes.
A. No.
Q. Did you compare smokers and non-smokers with respect to occupation?
A. No.
Q. Did you compare smokers and non-smokers with respect to environmental exposures in your data set?
A. No.
Q. Do you know whether smokers or non-smokers in your data set have more diabetes?
A. As a whole, no.
Q. Do you know whether smokers or non-smokers in your data set have more social support?

A. No.
Q. Do you know whether social support is an important factor in determining whether somebody goes into a nursing home?
A. Social support is one factor, it's my understanding, of going into a nursing home.
Q. Did you compare levels of stress among smokers and non-smokers in your data set?
A. No.
Q. Did you determine whether or not smokers or non-smokers were more likely to be disabled in the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

public aid population?
A. I wouldn't know what the relevance of such a calculation would be.
Q. Don't people who are disabled and on public aid cost a lot more money than people who aren't?
MR. HAMLIN: Objection, assuming facts not in evidence. Counsel is testifying.
THE COURT: You may answer that, if you know.
A. Well I don't know that that's true, but I also know that one way to achieve disability status on Medicaid is through smoking-attributable diseases such as lung cancer.
Q. But you don't know whether disability is a very

expensive category within the Medicaid program; is that right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: It's been asked and answered.
Q. Now your nursing home model estimates that the state spent about 260 million dollars for smokers who entered the nursing home because they had a smoking-related disease or condition; is that right?
A. That's correct.
Q. And your model compares time spent in nursing homes by never and ever smokers who are of the same age and the same sex; right?
A. That's correct.
Q. And I'd like to explore for illustrative purposes a little bit how you did this calculation by talking about the 94-year-old women.
So one of the age and gender groups that you looked at was to compare ever and never smokers, the amount of time they spent in the nursing home, who were women who were age 94; right?
A. That was one part of the calculations.
Q. And isn't it true that there were two 94-year-old women ever smokers in the nursing home in your national data set?
A. I believe that's correct.

Q. How many non-smoking 94-year-old women were in the nursing home, do you know?
A. I don't recall.
Q. And all that your nursing home model considers for these 94-year-old women are the time they spent in the nursing home and whether they ever smoked; right?
A. And age.
Q. And age.
A. Right.
Q. They're all 94-year-old women.
A. Okay.
Q. And for the 94-year-old women, the ever smokers spent more time in the nursing home than non-smokers did; right?
A. Correct.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

Q. And you apply that difference and the time spent in the nursing home for those two 94-year-old women compared to however many non-smoking 94-year-old women there were in your sample, you apply that difference to every woman who is 94 years old in the state of Minnesota from 1978 to 1996 who spent time in a nursing home who ever smoked; right?
A. That's the calculation that's included in the model, yes.

Q. And you did the same thing for 93-year-old women, and for 92-year-old women and for 91-year-old women and 90, all the way down to age 55; right?
A. That's correct.
Q. And you did the same thing for men for that same age span, one unit at a time; right?
A. That's right.
Q. Now someone was an ever smoker if they smoked a hundred cigarettes or more in their lifetime; correct?
A. That's correct.
Q. And it didn't matter when people here in Minnesota smoked to your model; did it?
A. The model took that definition, which is a standard definition, and calculated using that definition, so that you got appropriate differentials according to that definition of smokers versus never smokers.
Q. Did it matter what kind of cigarettes the people smoked, whether they were low tar or high tar?
A. Whatever they smoked, it was included in the average calculations.
Q. And it doesn't matter whether the person quit or when they quit; right?
A. Well I don't know if it matters or not. To the

extent that it matters, it's going to affect the averages we used, and the averages will reflect exactly what the smoking patterns were in the groups in that national population.
Q. Does it matter for the people here in Minnesota?
A. Does what matter?
Q. Does it matter for the people here in Minnesota whether they ever quit or when they quit?
A. In what sense?
Q. Well, you put women into your model who were here in Minnesota who you estimate were smokers; right?
A. Yes.
Q. Okay. For those women here in Minnesota, not in your national data set but here in Minnesota, does it matter when they quit or if they quit smoking?
A. I'm not sure of the point of the question. A reasonable way to estimate the effects of smoking on use of nursing homes in Minnesota is to take a standard definition of smoking versus non-smoking and apply that in the way we did through our calculations

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

stratified by age and sex.
Q. Is that a yes?
A. I'm not sure --
MR. HAMLIN: Object.

A. -- if I really understand the question.
Q. Well let me try one more time then.
Does it matter to your calculation whether anybody here in Minnesota, in your Minnesota data set, quit smoking or when they did, --
A. Well I don't know --
Q. -- for purposes of your nursing home calculation?
A. We didn't take that into account in the Minnesota data because it wasn't available and because what we were doing made for a reasonable application of statistical methods to answer the question we were addressing.
Q. It doesn't matter to your model, does it, whether a person entered the nursing home with lung cancer or Alzheimer's disease; does it?
A. It matters to the model to the extent that whatever those reasons are, they're picked up in our calculations in a way that reflects the average tendency of those things to happen in the population.
Q. You compared smokers, people who had smoked a hundred cigarettes a day -- or excuse me, a hundred cigarettes or more in their lifetime, to non-smokers, and you looked at the difference in time that they spent in the nursing home, and it didn't matter why

the person went into the nursing home; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: No, you may answer that.
A. We didn't make any attempt to try and figure out exactly why for each individual they might have gone into the nursing home. We looked at the population and calculated statistics about the population of people staying in nursing homes or not staying in nursing homes.
Q. Well let me ask this question: Does your model differentiate between those smokers in your sample who entered the nursing home because they had a disease or condition related to smoking, and those smokers who entered the nursing home with some other kind of condition?
A. It doesn't try to differentiate smokers beyond what I've already said.
Q. So it doesn't do that; is that right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: I believe it's been answered.
Q. Your national sample, however, contains a lot more information about these women and about all of the people in your national sample who entered the nursing home than your model actually used; right?
A. It does contain more information.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. And we can illustrate some of the additional kinds of information by looking at the 94-year-old women.
Have you looked at the 94-year-old women, the two smokers who went into the nursing home in your national sample?
A. I've seen some printouts of that information.
Q. Do you know what the diagnoses were for those two women?
A. No.
Q. Do you know when they started to smoke?
A. I don't recall.
Q. Do you know how many cigarettes they smoked?
A. I don't recall that either.
Q. Do you know whether they had any conditions at all that Dr. Samet or anybody else has said are related to smoking?
A. Dr. Samet, in -- in my understanding, has said that a variety of conditions could be complicated by smoking as well as those that he listed as explicit smoking-caused conditions in his charts.
Q. Did Dr. Samet tell you that depression was caused by smoking?
A. As a consequence of lung cancer.
Q. Okay. Did Dr. Samet tell you that paranoia is

caused by smoking?
A. No.
Q. Did Dr. Samet tell you that non-psychotic mental disorders are caused by smoking?
A. No.
Q. Did Dr. Samet tell you that depression related to your -- your spouse's death is caused by smoking?
A. He didn't tell me that it was, he didn't tell me that it wasn't.
Q. Do you think it is?
A. I don't know.
Q. Do you think a history of manic depression is caused by smoking?
A. I am not a medical expert.
Q. Did Dr. Samet tell you that manic depression was caused by smoking?
A. He did not tell me that.
Q. Did Dr. Samet tell you that history of nervous breakdowns is caused by smoking?
A. No.
Q. Did Dr. Samet tell you that any specified psychoses are caused by smoking?
A. No.
Q. Anxiety, did Dr. Samet tell you that anxiety is caused by smoking?

A. Only to the extent that, again, the treatment of almost any of the wide variety of conditions could be

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

complicated by the fact of a smoking-related illness.
Q. Do you know whether or not either of the two 94-year-old women in your national sample who were in the nursing home and who were ever smokers were in the nursing room -- nursing home for anything that had anything to do with their prior smoking?
A. In any statistical study like this you never know that about any individual. The whole point of a study like this is to take individuals in a population and make appropriate calculations to take into advantage the law of averages.
Q. And your model doesn't take into account the diagnoses of anybody in your national sample who went into the nursing home; right?
A. Not the model that we've presented here today.
Q. Now your model does estimate and attribute to something 87 million dollars in nursing home expenses for 94-year-old women; doesn't it?
A. No. I think that's a misleading way to characterize it. I've not used the model to make estimates for groups such as 94-year-old women. We used the model in totality to estimate a population total and allow for fluctuations from age group to

age group.
Q. And the way you got your population total was to take an estimate for each age and gender group and add them up; right?
A. I don't know as I would characterize, for each age and gender group, the number as an estimate. What you have for each age and gender group is a contribution to the overall total. It is not the estimate that I would make if I had the task of estimating for a particular age or sex group.
Q. Let me ask the question a different way.
If we recalculated your model as a sensitivity test the way you testified about yesterday, and this time we just excluded 94-year-old women, wouldn't your estimate be 87 million dollars lower?
A. I think that would be an unreasonable thing to do. A balanced way to do a sensitivity test would be to apply a rule that says something like the one we used. Let's take two age groups, look at where 95 percent of the data are, and let's do a sensitivity test where we take out people that could fluctuate in either direction.
Q. Doctor, I understand you think it might not be a reasonable thing to do, but I want to know what the result would be if you did it.

MR. HAMLIN: Objection, asked and answered, and also object to counsel's characterization of the statement.
THE COURT: Yes, counsel, do not characterize the statement. Just ask a question, please.
MR. BIERSTEKER: All right. Well Your

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Honor, I move to strike the last answer as not responsive to the question, and I'd like an answer to the question.

THE COURT: Okay. Re-ask the question, counsel.

BY MR. BIERSTEKER:

Q. Doctor, if you recalculated your nursing home model and we did a sort of sensitivity test like you talked about yesterday, and for purposes of my sensitivity test I just want to exclude 94-year-old women, the result I get will be 87 million dollars lower than the estimate that you presented; won't it?

MR. HAMLIN: Objection, asked and answered.

THE COURT: It's been asked and answered.

Q. Doctor, the result from your nursing home model based on all the people in your national survey, not just the 94-year-old women, now those results don't mean that smoking actually causes increased nursing

home expenditures; do they?

A. We are not trying to establish cause with our model. We're assuming cause based on the medical foundation of Dr. Samet from such factors as smoking causes stroke, stroke can cause nursing home entry, and other conditions in the same manner. All we're trying to do with the model is measure the extent to which in this population that causation is reflected in increased medical expenditures.

Q. Okay. Do you assume, then, that the results of your nursing home model based upon your national survey are a reasonable estimate of the amount of nursing home usage actually caused by smoking among people on Medicaid here in Minnesota?

MR. HAMLIN: Objection, Your Honor, that's asked and answered.

THE COURT: Well, you can answer it again.

A. I think what the model gives is a reasonable measure of the extent of those dollars.

Q. And you make that causation assumption, a reasonable estimate of increased nursing home usage actually caused by smoking, even though your model doesn't consider the people in your national sample, what diseases they had; right?

MR. HAMLIN: Objection, mischaracterizes

the testimony.

THE COURT: You may answer that.

A. I'm sorry.

Q. You make that causation assumption that your estimate is a reasonable estimate of the amount of nursing home usage actually caused by smoking even though your model doesn't take into account what diseases a person had; right?

A. The model is a simple model in that it compares smokers to non-smokers, taking into account their age and sex.

Q. And not their disease; right?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. That is not taken into account.
Q. And you make that assumption even though your model doesn't establish a causal relationship between smoking and nursing home disease; correct?
A. We assume, going into the model, that there is causation, and all we're trying to do is measure the extent to which that causation results in smoking-attributable expenditures.
Q. Doctor, does your model establish a causal relationship between smoking and nursing home usage?
MR. HAMLIN: Objection, asked and answered.
THE COURT: I think it's been asked and answered now.

BY MR. BIERSTEKER:
Q. Doctor, at the time you made your causation assumption, you didn't have any information that established a causal relationship between smoking and nursing home usage in the epidemiology; did you?
MR. HAMLIN: Objection, foundation. Counsel is testifying.
THE COURT: You may answer that.
A. I believe that my causation assumption came from Dr. Samet in the ways I've described, and at what point in time we had that discussion I couldn't tell you.
Q. Doctor, why don't you turn to volume three of your deposition at page 389, and I direct you to line five, please.
A. 389?
Q. 389, yes, sir.
Are you with me?
A. Yes.
MR. BIERSTEKER: 389, line five.
Q. I asked this question:
"Doctor, my question was: Is there any information that establishes a causal relationship between smoking and nursing home usage?"
And then there's an objection and a response.

And then your answer on line 12:
"I don't know of any."
Is that the question you asked and the answer you gave in your deposition, sir?
A. Well just before that I state very clearly that it's my understanding there are causal relationships between smoking and diseases that would lead to nursing home usage.
Q. And it also states very clearly here that you had no information, regardless of what your understanding was, that smoking causes -- there's a causal relationship between smoking and nursing home usage; right?
MR. HAMLIN: Objection, Your Honor, that's a misuse of the deposition. Dr. Wyant answered the question fairly and directly and he pointed out to counsel exactly how he answered the question, and now

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

counsel is misconstruing the deposition and using it inappropriately.

THE COURT: You may answer the question.

A. I'm sorry, now what is the question?

Q. Doctor, the question I asked was: Is there any information that establishes a causal relationship between smoking and nursing home usage, and you answered I don't know of any; is that right?

A. That's correct.

Q. Now on your testimony yesterday, I believe you referred to an article, Plaintiffs' Exhibit 18943. It's at tab four in your book. Would you turn to it, please.

Do you have it?

A. Yes.

Q. All right. Now this article reviews in the second paragraph on the first page, sir, some of the previous research on risk factors for going into a nursing home; doesn't it?

A. Yes.

Q. And the factors it identifies in that paragraph are advanced age; correct?

A. Yes.

Q. Being caucasian or white?

A. Yes.

Q. Having a physical disability; correct?

A. Yes.

Q. Having a mental impairment; right?

A. Yes.

Q. Living without a spouse; correct?

A. Yes.

Q. And your model takes into account none of those factors other than age; right?

A. Again, as I've stated, it takes them into account to the extent that these are in the averages for the populations that we've compared.

Q. And this study concluded in part -- if you turn to page 638, sir, the second-to-last line in the first column, that "smoking history was not a risk factor in nursing home usage by women."

A. That's exactly consistent with what I talked about yesterday. These are smoking effects on top of the effect of smoking on any conditions such as neurological conditions and stroke, and that there is an increased risk identified here for men but not for women.

Q. And the authors go on at page -- the next page, 639, at the top of the page in the discussion section and they say, "These findings, in general" -- talking about the results of their research -- "were similar to previous research on the risk of nursing home admission and illustrated that advanced age, restricted outside mobility, basic ADL disabilities" --

"ADL" means Activities of Daily Living; correct?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from the Industry Documents Library at UCSF: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

A. That's correct.
Q. -- "were the strongest individual predictors of entering a nursing home during a 10-year period."

Right?
A. This is a result that's entirely consistent with our estimates of only three percent smoking-attributable nursing home expenditures.
Q. And doctor, none of these criteria other than age, again, was taken into account in your model; right?
A. Not directly.
MR. HAMLIN: Objection.
Q. Did you look at your data set to see whether smokers or non-smokers had more restricted outside mobility?
A. No.
Q. Did you look at your data set to see whether smokers or non-smokers had more basic activities of daily living disabilities?
A. No.
Q. Now you mentioned, I think, a little while ago in your testimony, other estimates with respect to nursing homes, and in fact you made some other estimates of smoking-attributable expenditures for nursing homes; didn't you?
A. We have made some other estimates of smoking-attributable expenditures for nursing homes, yes.

Q. And Dr. Miller in fact had principal responsibility for making the nursing home calculations, at least up through June of last year; right?
A. Well it was a collaborative effort, and we all worked on it to one degree or another.
Q. Well Dr. Miller's answers with respect to the refined --
First let me ask this: The refined model includes the nursing home analysis; is that correct?
A. That's right.
Q. And Dr. Miller's answers about work on the nursing home refined model, at least up through June of 1997, are authoritative answers; aren't they?
A. I'd have to see the questions and the answers.
Q. Well why don't we look at your deposition, sir, volume one, page 148.
A. Of my deposition?
Q. Yes, your deposition, sir. And I'll refer you to line 15, and I asked this question --
There's a series of two questions and two answers.
"Well let me ask you this." And I was directing this my question to you, Dr. Wyant. "Dr. Miller was the person who concentrated on the refined model;

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

right?
"Answer: Yes.
"Question: Are his answers to question, then -- to questions, then, about that model the authoritative answers?
"Answer: I would presume so."
Does that refresh -- refresh your recollection, sir?
A. Yes.
Q. Now Dr. Miller said that your other estimates of smoking-attributable expenditures for nursing homes that he calculated before June were all over the map; didn't he?
MR. HAMLIN: Objection, Your Honor, it's improper use of a deposition of another witness with Dr. Wyant.
THE COURT: Sustained.
BY MR. BIERSTEKER:
Q. Do you know whether or not the other estimates of nursing home expenditures that were made prior to June of 1997 were all over the map?
A. I wouldn't characterize them that way.
Q. Do you know if Dr. Miller characterized them that way?
MR. HAMLIN: Objection, Your Honor, the

same objection.
THE COURT: The objection is sustained.
Q. Do you remember whether any of those other estimates of smoking-attributable expenditures for nursing homes showed that smokers didn't cost the state of Minnesota any money?
A. I don't recall.
Q. And we'll never know; will we?
A. What do you mean?
Q. Weren't the results from those analyses thrown away?
A. Well when we started analyzing the nursing home data, it was a difficult data set. There were a number of models that gave very high estimates, as I recall, but there were other estimates as well, but since none of them we considered reasonable or correct, we went on to calculating a more reliable model, which is the one that we presented here today.
Q. Do you know if those results were thrown away or not?
MR. HAMLIN: Objection, Your Honor, it's irrelevant, asked and answered.
THE COURT: You may answer.
A. I don't have any such results around.
Q. And if you don't have them, where would they be?

MR. HAMLIN: Same objection, Your Honor, it's irrelevant.
THE COURT: You may answer that.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Sponsored by tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

A. I have no knowledge of any such results.
Q. Let's talk about your diminished health status model. Now none of the people in your diminished health status model were treated for any smoking-related disease in the entire year; right?
A. Well I wouldn't characterize them that way.
Q. Well they didn't -- they didn't have any treatment for lung cancer, for example; right?
A. Well they were defined as not having treatment for one of what we've called the major smoking-attributable diseases.
Q. Oh, I forgot the word "major." All right. Let me ask the question again.
The people in your diminished health status model were not treated for any of the major smoking-attributable diseases; is that right?
A. I believe that's correct.
Q. And your total estimate for those people, putting together the two diminished health estimates, is 952 million dollars; right?
A. I haven't done that calculation, but it sounds approximately right.

Can I check it?
Q. Sure. Go ahead if you want.
A. I'm sorry, what was your figure?
Q. I thought it was 952 million dollars.
A. That looks approximately right.
Q. Now the individuals in this diminished health status model could have had any medical condition, injuries from a car accident, poisonings, mental illness, AIDS, drug abuse, ingrown toenails; right?
A. Any -- any individual could have any array of injuries, diseases.
Q. And you base your estimate for diminished health status on how good these people say they feel; right?
A. We use a standard method for these kinds of studies, as I've said, looking at self-reported health status.
Q. Your answer -- I'm sorry. Did I cut you off? I didn't mean to.
A. I believe I've finished.
Q. Were you finished? Okay.
What you used was the answer to the question: "In general, would you say that your health is excellent, good, fair or poor?" Right?
A. Yes.

Q. And that's a subjective measure of health status; right?
A. Yes.
Q. No doctor ever examined these people and ranked their health status according to some objective criteria as excellent, good, fair or poor; right?
A. Well I don't know that one did or didn't, but the data we were using is a self-assessment on health

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

status.
Q. And you compared the reports of current and former and never smokers by how good they felt, how they answered that question; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: You may answer that.
A. That part of the calculation involved looking at the extent to which smokers and never smokers responded to that question.
Q. And you referred yesterday generally to some literature about self-reported health status; didn't you?
A. I may have. I don't recall.
Q. Well are you aware of any article in the published literature that compares the self-reported health status of smokers and non-smokers who don't have any major smoking-related disease?

A. No, I don't think anyone in the studies that I've seen have had access to something like our claims data where we could separate out the model by people who have major smoking-attributable diseases and people who don't.
Q. Are you aware of any literature that compares the self-reported health status of people who are on Medicaid?
A. I don't recall any.
Q. Isn't it true that there's a relationship reported in the literature between self-reported health status and exercise?
MR. HAMLIN: Objection, Your Honor, foundation, counsel is testifying, assuming facts not in evidence.
THE COURT: Sustained.
Q. Well doctor, why don't you turn to tab 13 in your book, which would be Plaintiffs' Exhibit 26041.
Doctor, is this one of the articles which you read in preparation for your testimony?
A. Yes.
Q. In fact, it was an article that the plaintiffs designated; isn't it?
A. I believe so.
Q. And if you'll turn, then, sir, --

Well let me ask you this: Is it authoritative and reliable?
A. I believe so.
MR. BIERSTEKER: Okay. Your Honor, I would move the admission of Plaintiffs' Exhibit 26041 as a learned treatise.
MR. HAMLIN: No objection, Your Honor.
THE COURT: Court will receive 26041.
BY MR. BIERSTEKER:
Q. And doctor, if you'll turn to page 34 of this exhibit, there's a figure, Fig. 2, and it shows a relationship between exercise and good self-reported health status; doesn't it?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. Yes.
Q. And if you'll look at Fig. 3 on the same page, it reports a relationship between good self-reported health status and how many hours of sleep you get a night; doesn't it?
A. I think that's true. And all of these follow the leading charts and conclusions in here that look at odds of reporting poor health declining with smoking.
Q. Ah, yes. But these were all people who smoked, not just -- not just people who didn't -- not smokers who had no major smoking-related disease; right?

A. But the incidence of those diseases is such that I reasonably conclude that most of these people did not have major smoking-attributable diseases.
Q. Doctor, people with heart disease who smoke are in this; right?
A. It's possible.
Q. Well do you know or not?
A. No.
Q. The article also reports a relationship between self-reported health status and alcohol consumption; doesn't it? I think if you'll turn to Fig. 6 on the next page.
A. It reports a relationship.
Q. And doesn't it also report a relationship between self-reported health status and weight among both men and women in Figs. 4 and 5?
A. Yes.
Q. And your model of predicting self-reported health status does not include exercise, sleep, alcohol consumption; does it?
A. But it includes many other factors that are not listed here, and some that are listed here.
Q. Yes. You include weight; don't you?
A. Yes.
Q. And you include smoking.

A. Yes.
Q. Now does this model consider any differences in the accident rates of smokers and non-smokers in your data?
MR. HAMLIN: Objection, vague. We're -- I think we're unclear as to whether counsel is talking about this article or the statistical model.
THE COURT: Do you understand the question?
THE WITNESS: Could you ask it again?
MR. BIERSTEKER: Sure, I'd be happy to.
Q. Put aside the article. Does your model for self-reported health status take into account differences, if any, in the rates at which smokers and non-smokers have accidents?
A. As I've said before, the model takes into account all conditions and diseases by the same method, by looking at the extent to which smokers and similar non-smokers have higher or lesser

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

expenditures after structuring our model along the lines of disease as I've laid out.
Q. And you don't know whether those similar smokers and non-smokers have the same rate of accidents; right?
MR. HAMLIN: Objection, Your Honor, asked and answered. This has been asked several times and

answered several times.
THE COURT: It's a little different question. You can answer it.
A. I'm sorry?
Q. And you don't know whether the smokers and non-smokers who you are describing as similar have different rates of accidents -- of accidents; do you?
A. Based on our discussions, our reviews of the literature, we think that variables and factors in our model to a reasonable degree made smokers and non-smokers similar for purposes of the estimation we were making.
Q. But you haven't looked in your data set to determine whether or not there are differences between smokers and non-smokers, with respect to accidents and with respect to poisonings and with respect to exercise and with respect to drinking and with respect to dietary habits and with respect to mental state, to determine whether or not those differences are adjusted for. They're just not taken into account; right?
MR. HAMLIN: Objection to form, and asked and answered.
THE COURT: You may answer.
A. Those are all taken into account in the way I've

already stated, which is a reasonable way to approach it, and one entirely consistent with the way these studies are done in the literature.
Q. All right. So you say you've taken them into account. Is there -- is there --
You had that list of factors up on the monitor yesterday that you considered in your refined model. Was accidents among those?
A. No.
Q. Okay. Were poisonings among those?
A. There would be no reason. It would be improper to put those in as a factor in the model because of the fact, as Dr. Samet says, treatment for any of those could be complicated by having a smoking-related condition.
Q. Let's go back to a hypothetical similar to one I'd asked you earlier. If we're comparing the self-reported health status of smokers and non-smokers and they're alike in every way except smokers have more accidents, isn't it true that whatever diminished health status smokers report because they've had accidents in your model is going to get attributed to smoking?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

MR. HAMLIN: Objection, asked and answered.
THE COURT: You may answer that.

A. Well I have not looked at any data set from my examination of the data where that appears to be a reasonable characterization.
Q. When what appears to be a reasonable characterization, doctor?
A. The one you just made.
Q. The characterization that smokers have more accidents?
A. No, that everything is identical except for that one fact.
Q. All right. Well then let's assume that the smokers have more accidents, have more poisonings, exercise less, that they drink more and they have poorer dietary habits and they're more likely to be depressed. Now we've got more differences. All of those differences in your model, if they exist in the data, are going to get attributed to smoking; aren't they?
A. No. The way the model works is as I've stated. To the extent that smokers and similar non-smokers have different expenditures, after structuring for disease in the way we did and looking at similarities in the way I've described, to the extent that smokers had more expenditures than similar non-smokers, those will contribute to smoking-attributable expenditures,

and to the extent the reverse is true, it will lower the estimates.
Q. So if smokers who are the same age and the same sex and the same seatbelt usage and other factors that you do include in your model are compared to non-smokers, and the smokers report their health status as lower because they've had more car accidents, that will get attributed to smoking; right?
A. I'm sorry, I didn't follow that.
Q. If smokers who are similar, as you put it, to non-smokers, taking into account what your model takes into account, factors such as age and their sex and whether they wear their seatbelt, okay, have more accidents than non-smokers and report their health status as lower because they've had more accidents, that difference will get attributed to their smoking; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: Do you understand the question?
THE WITNESS: I'm not sure.
THE COURT: Can you rephrase it, counsel.
Q. Let me try it this way. Accidents are not a factor in your self-reported health status model; right? It's not in the variables that you include.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

A. It's not one of the specific factors on the list that's used to structure the model.
Q. And poisonings are not a factor in that model; right?
MR. HAMLIN: Objection, Your Honor, asked and answered.
THE COURT: Yeah, we're starting to go over this several times now, counsel.
MR. BIERSTEKER: Well I'm trying to make it clear --
THE COURT: All right. All right.
MR. BIERSTEKER: -- since this witness was having trouble with the question, Your Honor. I don't know what more I can do.
THE COURT: All right. Go ahead.
Q. Doctor, poisonings are not a factor that you've included?
A. Only to the extent that I've said several times.
Q. Well is it --
Is it a variable or isn't it?
A. It's not an explicit factor in one of the formulas, but it is included in the way that I've already stated several times.
Q. Well that's what I'm trying to understand, is the way that it's included. So --

MR. HAMLIN: Objection to counsel's statement, Your Honor.
MR. BIERSTEKER: I -- I apologize.
Q. Is disability a factor that you include in your self-reported health status model?
A. The same answer.
Q. So it's not a variable in the model explicitly.
A. It is not explicitly, and there would be no reason to do that. Disability is a consequence and related to smoking-related conditions, or could be.
Q. And it's related to car accidents too; right?
A. It's a possibility.
Q. All right. And occupation is not one of the variables or factors that you include in the self-reported health status; right?
A. Well it's included, again, in the sense that I've expressed on all these other factors.
Q. It's not an explicit factor; is that correct?
MR. HAMLIN: Objection, asked and answered.
THE COURT: I think it's been answered.
Q. And if smokers differ with respect to non-smokers with regard to any of those factors that are not explicitly considered in your model, the self-reported health status that may be lower as a result of those conditions is going to get blamed on

to smoking; isn't it?
A. The model doesn't assess blame.
Q. It will be -- I'm sorry.
MR. HAMLIN: Objection. He just

http://legacy.library.ucsf.edu/tid/gfn05a00/pdf
Generated from the Industry Documents Library at industrydocuments.ucsf.edu/docs/lsgd0001

interrupted the witness again.
THE COURT: Were you finished?
THE WITNESS: Yes.
Q. It will get attributed to smoking, won't it?
A. I'm sorry, now what's the question?
Q. To the extent that smokers report diminished health status because they are disabled or because they have an occupation that -- that makes them injured or because they have car accidents or because they get poisoned or because they have a poor mental state, if all those factors are not explicitly included in your model, your model will attribute to their smoking; right?
MR. HAMLIN: Objection, Your Honor, asked and answered. This really has gone on now for quite some time.
MR. BIERSTEKER: Last question along this line, Your Honor?
THE COURT: All right. Go ahead.
MR. BIERSTEKER: Thank you.
A. Again, to the extent that any conditions by

smokers or non-smokers within one of our groups which are set up in a reasonable way to compare like to like on many factors, the only way that those conditions or any of those conditions can contribute to smoking-attributable expenditures if -- is if the smokers in the groups have on average higher costs for those conditions than non-smokers in the same groups. And in reverse as well.
Q. All right. And -- and you don't know whether smokers have higher costs for those conditions in the same groups or not because you didn't look; right?
A. What we did is what I said, we made the calculation, and comparing smokers and non-smokers on this basis is what resulted in a smoking-attributable expenditure estimate.
Q. Now approximately 720 million of the 952 for diminished health status is for 19- to 34-year-old males; right?
A. No, that's a mischaracterization.
Q. Isn't that the estimate that you get from the 19- to 34-year-old males?
A. I believe it's a mischaracterization, going back to your previous question, because we are not making estimates for 19- to 34-year-old males. That is not an estimate.

Q. Do you make an estimate for 19- to 34-year-olds?
A. No.
Q. Do you make an estimate for males over the age -- for anybody, for people over the age of 65?
A. What we're --
What we do in the model is look at estimates for populations.
Q. I understand, doctor, but do you have a estimate for males over the age of 65 -- or excuse me, people

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

over the age of 65?
MR. HAMLIN: Objection, Your Honor, asked and answered.
THE COURT: You may answer.
A. We have made calculations of what the model says for a group of people over the age of 65, yes.
Q. And you have an estimate, then, for over the age of 65; right?
A. We have calculated what the model says about those people, yes.
Q. Okay. And you have dollars associated with those people; right?
A. No --
Well, there are obviously dollars in the model associated with those people.
Q. Okay. And you do the same thing for the 19- to

34-year-olds; right?
A. Do what same thing?
Q. You estimate the smoking-attributable expenditures and the percentage of their expenditures that are attributable to their smoking; right?
A. I've not made any estimate for 19- to 34-year-old males.
Q. I asked about --
I think the question was, and I apologize if I misspoke, but did you make an estimate for 19- to 34-year-olds, whether they're males or females or together?
A. I don't believe I've done that.
Q. But you do have an estimate for people over 65?
MR. HAMLIN: Objection, asked and answered.
A. I have made a calculation of that sort for people over 65 as a means of looking at the model.
Q. And you did that in order to make a comparison to the Medicare study that you displayed to the jury yesterday; right?
A. That's correct.
Q. And you can make the same kind of comparison --
You could make the same kind of calculation for the 19- to 34-year-olds; right?
A. One could do that. But if it's a smaller

subgroup, it's not clear without looking at the statistics whether that's a reasonable thing to do or not.
Q. And so you don't know whether 720 million dollars of your 952 million for diminished health status is among males 19 to 34; is that right?
A. Males 19 to 34 make some contribution.
Q. Do you know what that contribution is?
A. That contribution is in the hundreds of millions of dollars, and it's offset by hundreds of millions of dollars in offsets from other groups in the same categories.
Q. Do you know what percentage of males 19 to 34 are eligible for Medicaid because they're disabled?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. No.
Q. Don't you think that would be important to know if you're going to try to estimate the self-reported health status of males 19 to 34?
A. I think that is not important to know in the context of reasonable statistical methods to be applied in situations such as this one.
Q. So you don't think it was reasonable to include that factor even though you applied the results from your national data set to Minnesota Medicaid; right?
MR. HAMLIN: Objection, asked and answered.

THE COURT: You may answer that.
A. I'm sorry, what was the question?
Q. You didn't think that was important to know even though you take the results from your national data set and apply them to 19- to 34-year-old males on Medicaid here in Minnesota; right?
A. When we apply the national data, we take into account things such as Medicaid status.
Q. You don't take into account Medicaid status when you estimate their health status; do you?
A. No.
Q. Do you think the relationship between smoking and someone's self-reported health status is going to be different in a population of people who live and work in the community than it would be in a group of people who are disabled?
A. It may be. But there are consistent smoking effects adverse on health, is my understanding from the foundation laid by Dr. Samet, and to the extent those are different, there are factors in our model that would adjust for that.
Q. What factors are those, doctor?
A. Education.
Q. Education adjusts for disability; is that --
A. No.

Q. -- your testimony?
A. No, that was not my testimony.
Q. Did you compare people on public aid and the people who weren't on public aid to determine how they might be different?
A. I have made some comparisons like that.
Q. Do people on public aid exercise less?
A. That I don't know.
Q. Do they have more backaches and headaches?
A. That I don't know either.
Q. Are women on public aid less likely to get a mammogram?
A. I don't know.
Q. Are women on public aid more likely to feel down or depressed?
A. I have not made that calculation.
Q. Are people on public aid more likely to have trouble walking one block or climbing stairs?
A. I don't know.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. Are women on public aid more likely not to have had a breast examination in the last two years?
A. What I know is that women on public aid tend to be smokers and tend to have poorer health.
Q. Do you know if people on public aid are more likely to have car accidents?

A. No.
Q. Do you know if people on public aid are more likely to have injuries other than those caused by car accidents?
A. We've taken into account those factors, again, in all the models in exactly the way I've stated.
Q. And that was with education?
A. Comparing likes to like.
Q. But you haven't compared like to like with respect to these factors; have you?
MR. HAMLIN: Objection, asked and answered.
THE COURT: You may answer that.
A. I believe we compared likes to like according to standard factors that to a reasonable degree would make the smokers and non-smokers similar in our comparisons.
Q. Well doctor, which of the factors that you did include in your model takes into account different rates of injuries?
A. One of the purposes of controlling for many of the factors that we did control for is to take into account the fact that many of these conditions are related to the factors explicitly in our model, and the only way beyond that that they can contribute to smoking-attributable expenditures is -- is if

smokers, who are similar in all these other characteristics, have more expenditures on average than non-smokers.
MR. BIERSTEKER: Could I have the question read back, please.
(Record read by the court reporter.)
MR. BIERSTEKER: Your Honor, I'd move to strike and ask that I get an answer to that question.
MR. HAMLIN: Your Honor, that was responsive to the question which had been asked before.
THE COURT: Okay, I'll let the answer stand.
BY MR. BIERSTEKER:
Q. Do you know whether people on public aid are more likely to be drug dependent, more likely to be alcohol dependent, more likely to have mental impairments, than people who are not on public aid?
A. I've not made that calculation.
Q. Is the estimate that you put up on the board for the 65-plus people yesterday, is that your best estimate for people who are over the age of 65?
A. Yes.
Q. And whatever estimate you got for people who

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://tobaccodocuments.ucsf.edu/docs/lsgd0001

people too?
A. We're talking about 19- to 34-year-old males?
Q. Certainly we can talk about 19- to 34-year-old males, that's fine.
A. No. In looking at the data of that subgroup, I would make additional adjustments if I were going to estimate for 19- to 34-year-old males because of the pattern of offsets and fluctuations that you see in the data. You want to take into account the offsets in an appropriate manner.
Q. Okay. So the estimate that you get for 19- to 34-year-old males is not the best estimate; is that right?
MR. HAMLIN: Objection, asked and answered. That misconstrues the witness's testimony.
THE COURT: You may answer that.
A. What we make use of for 19- to 34-year-old males is their contribution in an appropriate way to the calculation of total smoking-attributable expenditures, and one that allows in an appropriate way for offsets in reliance on the law of averages to result in a reasonable estimate.
Q. So it is a reasonable estimate, then, for males 19 to 34.
MR. HAMLIN: Objection, asked and answered,

and that mischaracterizes the witness's testimony again.
THE COURT: I'll allow you to answer that.
A. What is in the calculation of total smoking-attributable expenditures from 19- to 34-year-old males is a reasonable calculation of their contribution to an overall estimate for the population.
Q. And is it a best estimate for that group?
MR. HAMLIN: Objection, asked and answered. Your Honor, we have been over this several times.
THE COURT: I think it's been answered now. Counsel, we'll take a short recess.
MR. BIERSTEKER: That will be fine. For lunch?
THE COURT: We aren't going to go through this again, are we?
(Laughter.)
THE COURT: Why don't we recess, reconvene at 1:30.
THE CLERK: Court stands in recess to reconvene at 1:30.
(Recess taken.)

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

AFTERNOON SESSION.

THE CLERK: All rise. Court is again in session.

(Jury enters the courtroom.)

THE CLERK: Please be seated.

THE COURT: Counsel.

MR. BIERSTEKER: Thank you, Your Honor. Good afternoon.

(Collective "Good afternoon.")

BY MR. BIERSTEKER:

Q. Doctor, I'd like to finish off self-reported health status, if we could.

Do you know how many 19- to 34-year-old male smokers on public aid were in the hospital in your national sample?

A. I don't remember exactly.

Q. Do you know whether or not your model attributes 90 percent -- actually more than 90 percent of their hospital care costs to their smoking?

A. Again, in a small group like that I think it's a mischaracterization to say that it attributes to some characteristic like that. It may be --

Q. Do you know --

I'm sorry. I didn't mean to interrupt. Go ahead, I'm sorry. Were you finished?

A. Yes.

Q. I didn't mean to cut you off.

Well do you know what percentage of their expenditures get attributed to smoking and then added into your total?

A. I don't recall that calculation, no.

Q. Do you know why those 26 young men, or however many there were in that group, were in the hospital?

A. I didn't look at those records. There are a variety of reasons, including pneumonia in one case, and many of those people had other smoking-related conditions in their histories that could have led to complications of treatment for other conditions, as Dr. Samet has testified. That's pretty much the extent of my investigation into that.

Q. Do you know whether one of those young men was a kidney donor?

A. I believe that's correct. Those are the kinds of things that are taken into account by the third reduction, the extent that there are kidney donors on one side or the other, and all the other kinds of conditions like that, many of which occur in small groups only among smokers and many of which only among non-smokers. The way the model works is to go over all groups and partition them out in a fair way.

Q. Were there any kidney donors among the non-smokers?

A. I don't recall a kidney donor among the non-smokers, just as in a neighboring group there was cerebral palsy among the non-smokers, none among the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

smokers.
Q. Do you know whether one of those young men was in the hospital for hemorrhoids?
A. It's possible.
Q. Do you know whether one of those young men was in the hospital for schizophrenia?
A. It could be. But again, I don't believe that that makes any difference to the fundamental workings of the model. It takes all such conditions and parcels them out in an equitable way based on the data.
Q. And assigns them to smoking unless the distribution of hemorrhoids and kidney donors and schizophrenia is the same among non-smokers and smokers; right?
A. Or -- excuse me.
MR. HAMLIN: Objection.
A. Or assigns to --
MR. HAMLIN: Objection, assuming facts not in evidence, foundation.

THE COURT: Counsel, don't interrupt your own witness.
MR. HAMLIN: I thought that he was waiting for me because he saw that I was getting up. But I will not do that, Your Honor.
THE COURT: Do you want to finish your answer, or do you want to rely on your counsel's interruption?
(Laughter.)
THE WITNESS: At this point I'm not sure where I stand in the answer anyway.
(Laughter.)
THE COURT: Well I can't give you legal advice.
THE WITNESS: Where are we? I'm sorry.
THE COURT: Why don't you just ask another question.
MR. BIERSTEKER: All right.
BY MR. BIERSTEKER:
Q. Your model takes into account imbalances -- I mean it takes into account things like schizophrenia or kidney donors or hemorrhoids, and if there's an equal number of schizophrenia and hemorrhoids and kidney donors among the non-smokers and the smokers, it comes out in the wash; right?

A. That --
MR. HAMLIN: Objection, vague.
THE COURT: Well you may answer that.
A. I'm not quite sure how to answer that.
Q. Well if there are more kidney donors and more schizophrenics and more people with hemorrhoids and more people with drug addiction and more people with mental disorders among the smokers, those dollars get attributed to their smoking; right?
A. The way it works, first of all, is not on counts

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

of how things happen, it works on total expenditures, and one reason that's important is because of the complications of treatment of these conditions that can occur when you have smoking-related illnesses, and what the model looks at is the balance of total expenditures for smokers versus similar non-smokers.
Q. Would it be reasonable, doctor, to attribute over 90 percent of the costs of somebody going in the hospital to donate their kidney to their smoking because of a complication?
A. The model does not address the costs of any individual person in the model. Individual persons make contributions, and what happens in the category we're talking about, that the net sum of those contributions, and for totally distinct groups even,

comes to four to five percent of the total dollars spent after balancing out all of these kinds of conditions you're talking about from smokers to non-smokers.
Q. Well let me ask you this question, then, doctor. You showed to the jury earlier today, and we'll follow it up later, relative errors for your different calculations. Do you remember that?
A. Yes.
Q. Did you compute --
And one of the relative errors you had was a relative error for the diminished health status mixed catagory; correct?
A. That's correct.
Q. And I believe it was 154 percent?
A. I believe that's right.
Q. Have you calculated --
And the relative error is a measure of uncertainty; right?
A. Of what?
Q. Uncertainty.
A. Well it's a measure of variability.
Q. Variability.
Did you calculate a relative error for your 19- to 34-year-old males?

A. It may be part of the calculations in terms of the contribution, but what we've seen exactly is that there is variation in the groups where the 19- to 34-year-old males are, which is precisely the groups where you would expect to see fluctuation from one group to another and precisely where you wouldn't want to make estimates for small groups.
Q. Doctor, do you know whether or not the relative error for the 19- to 34-year-old male calculation is lower than it is for your entire diminished health status mixed estimate?
MR. HAMLIN: Objection, foundation. Furthermore, mischaracterizes the witness's testimony with respect to this particular group.
THE COURT: You may answer the question.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

A. We've only calculated relative errors and reported them. These are estimated relative errors, and estimation of relative error is in some ways more difficult than estimation of an effect. I think the only reasonable relative errors that are worth calculating and relying upon here are exactly the ones that we presented.
Q. Did you calculate a relative error for your estimate for males 19 to 34?
MR. HAMLIN: Objection, asked and answered.

THE COURT: You may answer that.
A. No.
Q. So you don't know, then, whether or not the relative error for your estimate for males 19 to 34 is higher or lower than your estimate of the relative errors for everybody for diminished health status mixed.
A. I would not rely on an estimate of relative error that was calculated based on a group that small.
Q. Do you know how many people in your national sample were males 19 to 34?
A. No.
Q. Doctor, one of the exhibits you discussed in your direct examination is Plaintiffs' Exhibit 26047. You'll find that at tab 32 of your notebook.
MR. BIERSTEKER: It was already admitted in evidence, Your Honor.
Q. Do you have it, sir?
A. I believe so.
Q. Now if you'll turn to page 11, I believe in the first big paragraph on that page it talks about --
Oh. This was the study, by the way, wasn't it, doctor, for the Chrysler Corporation? Is that right?
A. Yes, that's correct.

Q. Okay. And it says that the annual claim costs for smokers were 31 percent higher than those for non-smokers among people covered by Blue Cross Blue Shield of Michigan; right, for Chrysler?
A. That's correct.
Q. Now let's turn to the next page, and that's about weight control, and the definition of low risk there in the second paragraph was somebody whose weight was within 20 percent plus or minus of normal for a person their age; right?
A. Yes.
Q. And the claim costs for persons whose weight was outside of 20 percent on either side of the normal weight was 37 percent higher for those folks who -- who were beyond normal weight by a great deal than those who were within 20 percent of their normal weight; right?
A. Yes.
Q. And if you'll turn to page 16, this took into account eating habits on this page?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from the Tobacco Industry Documents Library at UCSF: http://www.industrydocuments.ucsf.edu/docs/lsgd0001

A. Yes.
Q. And didn't they find that people who had poor eating habits had 41 percent higher costs than people who had better eating habits?
A. Yes. And all this leads directly into the kinds

of considerations that go into whether or not these factors should be in a model of smoking. The issue is not whether these factors alone have an effect, the issue is whether these factors have any effect on the relationship between smoking and expenditures. As the Surgeon General has said, controlling for factors like this makes no material difference, and that's exactly the conclusion that's come to in this study. When you go to the end of the study, they say in the past we have tried to look at interactions between these factors, and the correlation was so mild that it is not worth doing.
Q. Where does it say it's not worth doing, doctor?
A. If you'll give me a minute.
"We did not test the independence of the individual behaviors and so earlier study found that various health risks were mildly correlated."
Q. Oh. Doctor, do you know, if you put in things such as diet and weight control, which is a different --
The definition of weight here is different from the one you used; right?
A. I think so. I could check it if you want.
Q. And they talk about exercise in here, and alcohol, the driving habits, eating habits, stress,

mental health, blood pressure. All those things are discussed in this report; right?
A. That's correct.
Q. And there's elevated risks associated with each one of those for expenditures in this study, looked at one at a time; correct?
A. I believe that's by and large correct.
Q. And if you put all of those factors into a model and applied it to the data that you used, you don't know whether it would have an effect on what you attribute to smoking; do you?
A. We know --
MR. HAMLIN: Objection, asked and answered.
A. We know that it's not likely to have a material effect based on the foundation -- medical foundation on which we built this model, and these investigators apparently agreed.
Q. You didn't do it; did you?
A. No.
Q. Let's talk about your model for major smoking-related diseases.
Now Dr. Samet told you that smoking caused certain illnesses; right?
A. Yes.
Q. But there's a difference between whether smoking

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

causes certain illnesses on the one hand, and how much illness and how much it costs on the other; right?
A. There's a difference.
Q. And what you did was address the how much questions; right?
A. Well we had a foundation of causation. Then we measured the extent to which costs resulting from those diseases caused by smoking were apparent in the Medicaid and Blue Cross populations.
Q. And now let's talk about the dollars for your lung cancer/COPD and CHD/stroke models. And you compare the expenditures between smokers and non-smokers who have lung cancer and COPD or CHD/stroke, considering some other factors; right?
A. Yes.
Q. And it makes no difference to your estimate of expenditures what disease a person has; does it?
A. I'm not sure how to answer that. It certainly makes a difference as to whether they have lung cancer/COPD or CHD/stroke.
Q. Your model estimates that a person's medical expenditures will be exactly the same, doesn't it, whether the person has lung -- lung cancer or heart disease or peptic ulcers or any of the other diseases

included in the lung cancer/COPD or CHD/stroke categories; right?
A. In the refined model we treat the average expenditures with and without the disease, and it is approximately the same, or close enough to be reasonable for that purpose. But of course we have the core model as a check in which we separate out the costs for those different disease groups.
Q. Okay. But in your refined model, a person's expenditures are the same regardless of which one of those diseases they have. That's what you estimate; right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: It's been asked and answered.
Q. Did you ever compare the expenditures --
Well in the refined model you include -- you identify a person with lung cancer or COPD or one of the other diseases, and then you include all of their medical expenditures in your model when you estimate it; right?
A. That's correct. Those are the expenditures that we address.
Q. Those are the expenditures that you compare. It's the total medical expenditures for those people; right?

A. No. I'm sorry, I'm not --

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. Oh.
A. -- following you.
Q. In your model for the refined diseases, you estimate a person's total medical expenditures, not just those -- let me -- let me start over.
THE COURT: You said "refined diseases." And I don't think you really mean that, counsel.
MR. BIERSTEKER: Yes, I understand.
BY MR. BIERSTEKER:
Q. When you compare the health-care costs of different groups of smokers and non-smokers with these major tobacco-related diseases, you compare their total medical-care costs regardless of what disease was treated; right?
A. Again, I'm sorry, there's something I'm missing here.
Q. When you calculate the difference in health-care expenditures between smokers and non-smokers in your refined disease model, you use total medical expenditures for those people on everything; right?
A. Well the model is broken out by type of service. I mean total expenditures on hospitals, for example, total expenditures on prescription drugs.
Q. You never went and compared the expenditures

directly in the data set of smokers and non-smokers that were actually made to treat the major smoking-attributable diseases; right?
A. Again, I'm sorry, I'm just not following your question.
Q. You didn't go into your national data set, identify the people who had lung cancer, put the smokers in one pile, put the non-smokers in another pile, and compare the costs that they incurred only to treat their lung cancer; right?
A. Well if I understand this, I think what we're getting at is -- is what we talked about yesterday and the difficulty of separating out expenditures for some particular condition when you have a chronic condition such as the kind we're talking about.
Q. Oh, I understand. But you didn't attempt to make that comparison even in your national data; right?
A. I don't recall attempting it. I don't recall any understanding among us that it was a useful thing to try to do.
Q. Let's talk about the disease portion, then, of the major tobacco-related disease models, and let's talk about separately for lung cancer/COPD and CHD/stroke. Okay?

For lung cancer/COPD, you calculated the excess number of lung cancer and COPD cases that occurred among ever smokers in your national data set; right?
A. Within age and sex groups, I believe that's correct.
Q. And you're right, you did it within age and sex

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

groups.
Did you take anything else into account?
A. No, not for lung cancer/COPD. In those groups, smoking is considered the predominant cause of those diseases.
Q. All right. And then you looked at excess cases of coronary heart disease, stroke, and the other diseases that you included in that category among ever smokers and never smokers in your national data set; right?
A. Well, taking into account various factors.
Q. And you took into account a number of factors beyond age and sex when you did that; right?
A. That's correct.
Q. But your model doesn't tell you, for example, the number of cases of heart disease and lung cancer that occurred because people smoke; right?
A. We take --
MR. HAMLIN: Wait. Objection, Your Honor.

I believe that this area may go to the court's ruling on this issue.
THE COURT: No, you may answer that.
A. I'm sorry, I have to ask for the question.
Q. Okay. Your model doesn't tell you, does it, the number of extra cases of heart disease and lung cancer that occurred because people smoked; correct?
A. What our model does, we assume that smoking causes lung cancer, and it looks at, on a year-to-year basis, how many cases of lung cancer or COPD or stroke can be attributed to smoking, and comparing how many of those occurred among smokers and how many occured among similar non-smokers.
Q. And smoking-attributable diseases are not because people smoked; right?
A. Only to the extent that there are people there in these programs who did smoke, there are people in these programs who did not smoke, and ones that are smoking, we see an excess of these diseases.
Q. Did you ever look at the medical records of any of the smokers here in Minnesota to determine whether their lung cancer or heart disease or other major tobacco-related disease was actually caused by smoking?
MR. HAMLIN: Objection, Your Honor, this

goes beyond the expertise of this witness. This witness is not a medical doctor nor is this witness an epidemiologist. In fact, counsel objected when the witness tried to get into epidemiology in any detail yesterday.
THE COURT: Well, I guess he can tell us that.
THE WITNESS: I'm sorry, Your Honor, I didn't hear you.
THE COURT: You can answer that. You can tell us whether you have expertise to answer the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

question.
A. Could you ask the question again?
Q. Well let me ask a slightly different question.
Did anybody on your team, including Dr. Samet, ever actually examine the medical records of the smokers here in Minnesota to determine whether anybody's lung cancer or heart disease or other condition was actually caused by their smoking?
A. I can't speak for any members of my team. I know that I didn't, and I'm not sure that there is any way that, in my knowledge, that one could determine that by looking at medical records.
Q. Did you examine any medical records for any people in your national survey?

A. I did not look at any medical records. In fact, central to what we were doing was an attempt to preserve the confidentiality of people in the databases that we looked at, and not even look at identifying information.
Q. Why did you do that?
A. I don't think it's right as a statistician to look into doctor/patient relationships and just simply compile databases of this sort in a way that identifications could be made of people. That's simply not the way biostatisticians proceed in these kinds of studies.
Q. Do you know whether or not the recipients of Medicaid here in Minnesota have a legal obligation to cooperate with the state in pursuing claims such as this?
MR. HAMLIN: Objection, Your Honor, calls for a legal conclusion.
THE COURT: Sustained.
Q. Doctor, you put up a chart earlier today, I believe, comparing the results from your core model and your refined model. Do you remember that?
A. Yes.
Q. And that comparison is only for lung cancer/COPD and CHD/stroke; right?

A. Yes.
Q. Did you look behind those totals to see if there were big differences in the dollars that you estimate with your refined model and your core model for different age and gender groups?
A. I don't recall ever looking at that. Again, the focus of this model was on what the totals were, not on individual groups.
Q. Well you're looking at the same people in both the models; right?
A. I'm sorry?
Q. The core model and the refined model look at the same groups of people; right? It comes --
The people come from the same sample.
A. Well they -- the two models certainly address the same people in the Minnesota claims data.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

Q. Do you know --
Why don't we put up on the board, if we could, Plaintiffs' Exhibit 30185, which is an exhibit that was admitted during the course of Dr. Zeger's testimony. 30185, yes. All right.
MR. HAMLIN: Your Honor, just for the record, I don't believe that this exhibit was designated for Dr. Wyant.
MR. BIERSTEKER: Counsel, as I recall Drs.

Zeger and Wyant were designated together.
MR. HAMLIN: All right. Thank you.
BY MR. BIERSTEKER:
Q. Now the result from the core model for males 35 to 64 was that 48.4 percent of the medical expenditures for men in that age group with coronary heart disease, stroke, and all the other diseases in that category, was due to their smoking; right?
A. That's correct.
Q. Do you know what the number is for the refined model?
A. No.
Q. Do you know if it's less than five percent?
A. No.
Q. I want you to assume it's less than five percent. Does that make any difference to you?
A. It comes right back to the same point, that the purpose of these models is to calculate reliable estimates for these whole populations. These were just looks at how the model works underneath in terms of compiling contributions. It's precisely because in some of these small groups you can get fluctuations that you want to look at the total, and you go to the refined model and take into account additional factors. These factors can either

increase or decrease the smoking-attributable percentage, and it can do that differently in different subgroups.
Q. But there's only one sample; right? It's not like --
There's only one sample, one National Medical Expenditure Survey; right?
A. That's correct.
Q. So this is not a situation where somebody went out and took a brand-new National Medical Expenditure Survey and you're getting fluctuations from one survey to the other; right?
A. Well the National Medical Expenditure Survey is used in both of these models.
Q. Exactly.
Now for women in the core model 35 to 64, 30.4 percent of their expenditures were attributable to their smoking; right?
A. That's the contribution for this group that we see in this table here.
Q. And do you know what the result was in your

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

refined model?
A. No.
Q. I want you to assume it was over 45 percent. All right? Does it bother or is it troublesome to

you, doctor, at all, if less than five percent of the CHD/stroke dollars are attributable to smoking in men age 35 to 64, but 10 times that amount, over 45 percent, would be attributable to smoking in your refined model for women 35 to 64?
A. No, it wouldn't trouble me. It's simply a reflection of the fact that there are fluctuations across these groups, and that's, among other things, precisely what's summarized in the relative error. It's precisely those kinds of things that you want to address, and you take the contributions of these -- each of these groups to a composite estimate of the whole population that you're addressing.
Q. Remember yesterday when you had your skate board example up?
A. Yes.
Q. And you had the 17-year-old up there and he had 400 dollars --
A. Yes.
Q. -- from however many people you thought were in that 17-year-old group? And let's say you calculated that number one way and you got your 400 dollars, and now let's say you calculated it another way, same sample, and you got 40 dollars. That's not fluctuation due to a change in your sample; right?

A. I mean in the hypothetical you're posing it's due to the sample in the sense that the sample has some characteristics that if you apply two methods, at this point of unknown validity, the nature of that sample combined with the methods may give you some different results.
Q. And do the kinds of comparisons we've been talking about for the CHD/stroke group up here address the validity of the calculations you made in the core and the refined models?
A. No, I don't think so. The thing to check in checking validity is to look at the quantity that you're trying to estimate and you design the models to estimate, which are not the estimates in these individual groups. You know very well that when you take additional factors into account, given the characteristics of any sample, there could be a fluctuation in the results from one group to the next. And the whole point of taking all of those into account is to average across those.
Q. Well let's take a look at another exhibit that was previously admitted, I believe, it's Plaintiffs' Exhibit 30184.
Now this is the result of the core model for lung cancer/COPD, and let's look at men 65 plus. Now

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

men 65 plus is a group for which you made an estimate at least for Blue Cross; right?
A. That's correct, for purposes of --
Q. Comparing --
A. -- checking them out.
Q. All right. Why don't we --
The core model here says 58.9 percent of the medical expenditures for men 65 and over was attributable to smoking for those men who have lung cancer/COPD. Do you see that?
A. I see that figure.
Q. And again, do you know what the result is from your refined model?
A. No, I don't.
Q. And again, it wouldn't be a cause of concern to you or a reser --
You wouldn't have any reservations if the number in your refined model for lung cancer/COPD in men 65 and older was 37 percent?
MR. HAMLIN: Objection, assuming facts not in evidence.
THE COURT: Sustained.
Q. Doctor, I want you to assume that your refined model for lung cancer/COPD attributes 37.7 percent of the expenditures for men 65 plus to their lung cancer

and COPD. Does that suggest anything to you at all about the validity or the certainty of the estimated -- estimates that you get from these two models, the core model and the refined model?
A. It suggests to me that it confirms the value of calculating both core and refined models, which is what we did.
Q. If I asked you about any of the other age and gender groups on this chart, do you know what the corresponding result is for the refined model?
A. I have not looked at that calculation, no.
Q. And it really doesn't matter to you; right?
A. I haven't seen them. I can't say without seeing them that something might not make any difference, but in general if they're the kinds of things you're talking about here, the answer would be the same.
Q. Did you break down the results from your core model or your refined model and compare them for the different groups, for GAMC, for Medicaid, or for Blue Cross?
A. No.
Q. Do you know whether or not your core model for CHD/stroke attributes 86 percent more dollars to smoking in GAMC than your refined model does?
A. I don't know that.

Q. Do you know whether your core model attributes 25 percent more expenditures to smoking for Medicaid

http://legacy.library.ucsf.edu/tid/gfn05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

in the CHD/stroke model than your refined model does?
A. I don't know that. But if I did know that, it would be the same level of concern to me as the rest of this. It would indicate again to me the reasons why we need to focus on the groups targeted by these estimates and also the need to do the kinds of checking that we did.
Q. In the comparison of your refined and core models for the totals earlier today, as I recall, the core model was about 626 million dollars and the refined was about 558; is that --
A. Sounds about right.
Q. And the difference, then, would be about 68 million dollars; right?
A. Sounds approximately right.
Q. And one of the differences between the core and the refined model is that the refined model took more factors into account; right?
A. That's one of the differences.
Q. Does that suggest to you that if additional factors were taken into account, that total would fall either further?
A. Absolutely not. Taking additional factors into

account is just as likely to raise the value as lower it. And we saw an example of that yesterday with the women's health study where taking into account an extended list of the kind of factors that you were talking about this morning consistently increased the relative risk of coronary heart disease, fatal coronary heart disease and heart attack in women.
Q. Isn't it true, doctor, that if you add exercise and depression to your CHD/stroke model, the health-care costs attributable to smoking will fall by approximately 46 percent?
MR. HAMLIN: Objection, foundation, assuming facts not in evidence.
THE COURT: Sustained.
Q. Have you reviewed the reports of defendants' experts in this case?
A. I have glanced at them.
Q. Have you read them?
A. I have read parts of them. I don't know that I've read them all in their entirety.
Q. Do you know whether the defense experts added exercise and depression to your CHD/stroke model?
A. They may well have. But even if they had, as I said this morning, adding exercise I'm not sure is a useful exercise. It's adding something that's as

likely to be a result in many instances of disease as a cause of disease, so all you're doing is taking the disease out of a disease model.
Q. Do you know whether or not your refined model adjusts reliably even for those factors that it does include?
A. Reliably in what sense? I don't understand the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

question.
Q. Well what we're trying to do is compare like to like; right?
A. Yes.
Q. You're not trying to make just a simple prediction; correct?
A. Well we're certainly trying to compare like to like.
Q. Well doctor, isn't there a separate body of literature that addresses the problem of using regression to adjust for differences in background characteristics like exercise and seatbelt use and overweight in two groups that you're comparing, smokers and non-smokers here, than there is with the use of regression analysis just to make predictions about things?
MR. HAMLIN: Objection, foundation, assuming facts not in evidence. Counsel is

testifying.
THE COURT: Do you understand the question?
THE WITNESS: Not really.
THE COURT: Why don't you re-ask it. I didn't understand it either.
MR. BIERSTEKER: I'm trying.
THE COURT: Okay.
Q. Regression can be used to make predictions; right?
A. Yes.
Q. Regression can also be used to adjust for differences among two different groups that you're trying to compare; right?
A. That's correct.
Q. And isn't the body of literature that addresses the use of regression to make predictions distinct from the body of literature that discusses the use of regression to make adjustments for those kinds of differences?
MR. HAMLIN: Same objection, foundation.
THE COURT: You can answer that if you know.
A. I -- I wouldn't call there's distinct literatures. There's lots of literature out there that talks about regression techniques.

Q. Doctor, have you ever been a professor at any university?
A. No.
Q. Have you ever served on the editorial boards of any peer-reviewed journals?
A. No.
Q. Have you ever served on any committee of national societies for statistics that addressed regression or other -- other statistical techniques?
A. No. I'm a practicing statistician. I tend to use regression along with other analysts and scientists in applications to kinds of estimation

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

projects that we have here, for example.
Q. Now the lung cancer/COPD and CHD/stroke categories that you used, they don't include all of the diseases that the Surgeon General has said are associated with smoking; do they?
A. Well we took our list of diseases from Dr. Samet. Certainly the lung cancer and COPD and CHD/stroke categories we have don't include all the diseases that Dr. Samet includes in with diminished health. As to the rest of them, they're what Dr. Samet provided us.
Q. Does the list that Dr. --
The list that Dr. Samet provided you is

different from the list of the diseases that the Surgeon General says are associated with smoking; correct?
A. I believe there may be some differences.
Q. Do you know what happens if your core model is used to analyze all of the diseases that the Surgeon General says are associated with smoking?
A. Well I would have to know what you mean by using the core model for all of the diseases.
Q. Taking all the diseases that the Surgeon General of the United States says are associated with smoking, determining whether smokers and non-smokers on public aid have more of those diseases, which group does, and using your core model to attribute costs for smoking for all of those diseases.
A. I don't know what you're talking about exactly, but if you're talking about including things that are part of diminished health, for example, then A, that would be a totally inappropriate thing to do, in my opinion. But in any event, I don't know what happens.
Q. Do you recall reading anything about that in the reports of the defense experts?
A. Vaguely.
Q. Do you recall what they concluded?

A. No.
Q. Now you didn't use the core model, I think as we may have already discussed, as a check on your diminished health model; right?
A. No. The core model we've discussed addressed only lung cancer/COPD and CHD/stroke.
Q. If you used your core model not just for lung cancer/COPD, CHD/stroke, but for everything, total medical expenditures between smokers and non-smokers on public aid, that would be a check on the whole refined model; right?
A. I don't see how that can possibly be. I mean Dr. Samet in the foundation he laid out for us was very explicit that the effects of diminished health could not be adequately captured with some group of ICD-9 codes, and so from that alone I don't know how you would lay a foundation for using codes of that

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

sort in a core model of the kind that was used for lung cancer or CHD/stroke.
Q. If you --
You could use your core model to compare the total medical costs of smokers and non-smokers on public aid regardless of what disease they had. Put in everything; right?
MR. HAMLIN: Objection, asked and answered.

THE COURT: No. You may answer it.
A. Well I -- I don't understand how you would do that in any sensible way.
Q. It's not something you've done; right?
A. Certainly not.
Q. Do you know whether the defense experts tried that?
A. No.
Q. Doctor, do you know for any Medicaid recipient in the claims data whether they smoked or not?
A. Any Medicaid recipient in the claims data?
Q. Yes, sir.
A. Well we analyzed and collected the claims data for all Medicaid recipients, and so some of them responded to the Behavioral Risk Factor Survey, so we do have smoking information on some of those people.
Q. Oh. Were you able to match them up?
A. No.
Q. So for any individual person in the Medicaid claims data, you don't know whether they smoked or not; right?
A. It's true that we can't go to any person with the encrypted I.D. that we had coded there at Medicaid and say that this fake I.D. person, we don't know whether that person smoked or not.

Q. And you similarly don't know whether any person in the Medicaid claims data was overweight; right?
A. No. But for all of these things, we can develop estimates based on the other databases.
Q. You had no hard data with respect to that specific issue; right?
MR. HAMLIN: Objection, form and foundation.
THE COURT: Rephrase your question, counsel.
BY MR. BIERSTEKER:
Q. Let me ask the question more generally. There's no information in the Medicaid claims data about whether somebody smoked, whether they were overweight, whether they used their seatbelt, what their educational status was or what their self-reported health status was; right?
A. I don't think that's correct.
Q. Did they check off a box in the claims data about whether they smoked or were overweight or used their seatbelt or what their educational status was?
A. I believe -- and I'm going on memory here -- I

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

believe there was information on education in the Medicaid data.
Q. You just don't know for sure as to education; is

that right?
MR. HAMLIN: Objection, asked and answered.
THE COURT: It's been asked and answered.
MR. BIERSTEKER: All right.
BY MR. BIERSTEKER:
Q. But there was no information, we're sure, with respect to smoking, overweight, seatbelt use, and self-reported health status; right?
A. There is no information on those directly in the claims data. And I've certainly made that point clear, I hope, yesterday, with regard to smoking.
Q. And that was one of the problems that made this analysis more difficult than it otherwise would have been; right?
MR. HAMLIN: Objection to the form, foundation. Characterization is improper.
THE COURT: You may answer.
A. I mean I wouldn't have characterized it as a problem. It's a standard kind of thing that statisticians deal with every day in what they work with.
Q. Doctor, isn't it true that information was missing in every single data set that you used for some of the factors in your model?
A. There was some missing information in every data

set -- as there is in any large data set, and that led to our effort to combine the best available and reliable data that addressed these issues.
Q. All right. Let's talk about what data was missing from which data set.
In the National Medical Expenditure Survey, isn't it true that over half of the medical expenditure information was imputed by the Agency for Health Care Policy and Research that conducted the survey?
MR. HAMLIN: Objection to foundation, assuming facts not in evidence.
THE COURT: Sustained.
Q. Do you know whether medical expenditure information was missing for many of the medical events in the National Medical Expenditure Survey?
A. It was certainly missing for some of the events.
Q. Do you know for what percentage of --
What percentage of the medical expenditure information was missing in the National Medical Expenditure Survey?
A. For every one? No.
Q. Do you know what percentage was missing for the people who you examined in your study?
A. No.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. Was smoking information missing for some of the people in the National Medical Expenditure Survey?
A. For some of the people, yes. And again, the agency took efforts of putting into place corrective calculations to account for that.
MR. BIERSTEKER: I'm sorry, I didn't get that answer. Could I have it read back.
(Record read by the court reporter.)
Q. Doctor, did the Agency for Health Care Policy and Research address the missing-smoking-information issue?
A. Yes.
Q. You also addressed the missing-smoking-information issue; didn't you?
A. Yes.
Q. For example, in your refined disease model you were missing smoking information for some of the people; right? Your refined model for CHD/stroke and lung cancer.
A. That's correct.
Q. And when you were missing the information for those people, you just assumed the person was a smoker; right?
A. That was the working assumption that we did. If you take the alternative assumption, just taking them

out of the model, we would have had a damages estimate that was approximately 170 million dollars higher.
MR. BIERSTEKER: Your Honor, I object and move to strike. This is another instance of work product that wasn't produced to the defense.
MR. HAMLIN: Your Honor, counsel opened the door, and he just didn't like the answer that he got.
MR. BIERSTEKER: I -- I don't --
MR. HAMLIN: That was his question.
MR. BIERSTEKER: Your Honor, I thought the whole purpose of the exchange of information before trial was to avoid surprise.
THE COURT: Okay. But you did ask the question, counsel, and you do have the answer.
BY MR. BIERSTEKER:
Q. Was that calculation produced to defendants?
A. It was made only recently when you brought this issue up.
Q. The insurance status was missing for some of the people in the National Medical Expediture Survey; wasn't it?
A. There may have been. I don't recall on that one.
Q. Some of the income information was missing for

people in the National Medical Expenditure Survey; wasn't it?
A. Yes.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Industry Documents Library
https://www.industrydocuments.ucsf.edu/docs/lsgd0001

Q. Do you know what percentage?
A. Approximately 20 percent.
Q. Some of the educational status, marital status, seatbelt use and overweight information was missing, too; right?
A. That's correct.
Q. And it was as high as 20 percent for some of those categories; is that right?
A. I don't recall.
Q. Now you were also missing information in your Minnesota data set, the Minnesota telephone interview.
A. Yes.
Q. For example, you didn't know whether any of the people in the Minnesota telephone interview survey had lung cancer or COPD or CHD/stroke; right?
A. No. The survey didn't address those issues.
Q. And so --
A. The Behavioral Risk Factor Survey, and for the things it addressed, it was a very complete data set, in my experience of working with such things.
Q. And because you were missing that information,

you estimated which people in the Minnesota telephone survey had coronary heart disease/stroke, or lung cancer/COPD; right?
A. Well we estimated what the populations in our groups that we've addressed here, the Blue Cross Blue Shield and the Medicaid, would look like in terms of their characteristics. Given the characteristics in general in Minnesota from the Behavioral Risk Factor Survey and looking at the probability of having these diseases based on the relationships you can see in the National Medical Expenditure Survey, we estimated what the population in our groups would look like in terms of their characteristic profile if they had -- if we focused only on the groups with CHD/stroke or with lung cancer/COPD.
Q. And you estimated whether or not each and every person in the Minnesota telephone survey had CHD/stroke or lung cancer/COPD; right?
A. Well we went through an exercise to estimate what I just said, which is what the groups of people in our Minnesota claims would look like in terms of a profile of their characteristics, and we did that using the Minnesota Behavioral Risk Factor Survey and the National Medical Expenditure Survey.
Q. You didn't know what the medical expenditures

were for everybody in the Minnesota telephone survey; right?
A. Again, it was not something that was addressed in the telephone survey. It wasn't its purpose.
Q. And you estimated the medical expenditures of everybody in the Minnesota telephone survey; didn't you?
A. I'm sorry, I didn't hear that.

http://legacy.library.ucsf.edu/tid/gfn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. You estimated the medical expenditures for each person in the Minnesota telephone survey based upon your national sample; right?
A. Part of the calculations involved looking at individuals in the Behavioral Risk Factor Survey and applying formulas for the three reductions from the National Medical Expenditure Survey.
Q. Did you know what the self-reported health status was for anybody in your Minnesota telephone survey?
A. Again, I'm going on memory here, but I think the years they asked that question were '91 and '92, but I would want to go check the records before I rely too heavily on that information.
Q. But in those instances when you were missing it --
You looked at the Minnesota telephone

information from '84 through '95; right? Have I got that right?
A. I think it was '84 to '94, but again --
Q. In any event, in the years in which that information was missing, you estimated it for the people who responded to the survey; right?
A. Yes. We did put in an estimate of reported health status based on their other characteristics and the relationships of the National Medical Expenditure Survey.
Q. Now you assigned some of the people who participated in the Minnesota telephone survey to GAMC and Medicaid; right? You identified a group of people as Medicaid or GAMC recipients; right?
A. No. There were people in the Behavioral Risk Factor Survey that were identified as on that program.
Q. Well isn't it true that for about 90 percent of the people that you include as receiving Medicaid or GAMC, you didn't know whether they were really receiving Medicaid or GAMC and you estimated it?
A. No, that's not a fair characterization of what we did. We did not assume that they were on GAMC in these groups. I think what you're referring to was the fact that we used the Behavioral Risk Factor

Survey to estimate approximately what the group of people most likely to use Medicaid or GAMC, or the population, if you think of it in reverse, in which new Medicaid or GAMC recipients are likely to come.
Q. And don't you end up, then, with about 1200 percent more people who your model says were on public aid here in Minnesota than there really were?
A. No. The model doesn't say they're on public aid. The model is assuming that people on public aid tend to come from this group we're talking about.
Q. And they tend to come from that group, and that group is what?
A. Poor, near poor, and people with incomes above

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

the near-poor level who were on Medicaid or GAMC.
Q. So the group includes people who are poor and near poor, but who weren't actually on Medicaid and GAMC; right?
A. This group I'm talking about certainly does, yes.
Q. You were missing private insurance information for a number of people with the Minnesota telephone survey, too; right?
A. That's possible. I don't recall right now.
Q. When you were missing it, you estimated it or filled it in or imputed it; right?

A. My recollection is we estimated it by using neighboring years in the risk factor survey.
Q. You were also missing values for educational background, income, seatbelt use, and in some instances being overweight in the Minnesota telephone survey; right?
A. Yes. There's missing information in every survey like this. And this one was certainly not in any way, you know, unusual in this respect from what I could see.
Q. Doctor, let's talk for a minute about the claims data, but only briefly.
There are claims, are there not, that the state of Minnesota pays for Medicaid or for GAMC and it subsequently discovers that they were fraudulent and they should not have been paid; right?
A. I assume that happens sometimes, yes.
Q. And when that happens, the state goes out and tries to get the money back; right?
A. There's certainly programs in place to do that.
Q. Now were the data that you used on paid claims adjusted to reflect the state's recoveries of payments that had been made because of fraud?
A. They were adjusted in two ways -- or rather, there was one adjustment and one check. In the

claims data, whenever there is an adjustment to a previous bill, it was overpaid, there's a negative payment entered in a subsequent year, and that's taken back off the previous payment.
Q. You relied on the Medicaid Statistical Information System or MSIS. Did I get the name right?
A. That's correct.
Q. And that's a summary of the claims data; right?
A. Yes.
Q. And that summary is prepared in order to report to the federal government at the end of the year; right?
A. That's certainly one purpose.
Q. After the report is made for the federal government, are those data changed to reflect subsequent discoveries of fraudulently-made payments?
A. Well the subsequent changes are in the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

subsequent tapes, so part of what we were doing when we processed these tapes at the state center was looking forward in time and finding any subtractions that reflected back on the tapes. Say if we had a tape for 1978, we would look forward to '79 and see if there were any corrections being made back to the tape for '78.

Q. What about undetected fraud, did you do anything other than to rely on what the state does to unearth fraudulent payments in the claims data?
A. Well the state has very extensive systems to ensure that -- that what it's paying for is reasonable and medically necessary. And I did talk to people about that system, and that system has received various commendations from HCFA and whatnot, and I relied upon that system upstream from the data that we processed to calculate smoking-attributable expenditures.
Q. Do you know whether Attorney General Humphrey has estimated that 10 percent of the total medical expenditures made here in Minnesota were fraudulent?
MR. HAMLIN: Objection to form and foundation, assuming facts not in evidence.
THE COURT: Sustained.
BY MR. BIERSTEKER:
Q. Doctor, could you turn to your notebook at tab 31. This would be defense Exhibit BYM00433 -- excuse me. Tab 20. I apologize.
A. I'm sorry, could you read that for me again?
Q. It's tab 20 in your notebook.
A. Twenty?
Q. Yes.

A. I have -- I think I have your tab here.
Q. I'm sorry, what?
A. I said I think I have your tab here.
Q. All right. And that document is entitled "Controlling Health Care Costs: Ten Proposals to Complement the State Health Care Commission's Cost Containment Plan," and it's by Minnesota Attorney General Humphrey, dated March 3rd, 1993.
A. Yes.
MR. BIERSTEKER: Your Honor, defendants would move the admission of Exhibit BYM000433.
MR. HAMLIN: Your Honor, I don't think that -- that this document -- or that a proper foundation has been established with this witness for this document. He hasn't even asked him if he's seen it or read it or relied on it.
THE COURT: Couldn't you ask a little foundation, counsel?
BY MR. BIERSTEKER:
Q. Doctor, have you seen this document before?
A. I think I glanced at it in some material that you guys sent over.
Q. Right. The defendants designated this as one of

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

the documents they wanted to ask you about here; right?

A. Is there a question pending?
Q. Yes. Do you know whether or not the defendants designated it as a document about which they wanted to inquire of you here at the trial?
A. Yes, I think they did.
MR. BIERSTEKER: Your Honor, I'd move the admission of this document. It was designated for the witness. It's an admission of a party opponent.
MR. HAMLIN: I still don't think there's been a proper foundation. The document has nothing to do with Dr. Wyant.
THE COURT: Can we ask if he's read it?
MR. BIERSTEKER: I did, Your Honor, and I believe the answer was whether -- he said he had glanced at it. But I'll ask again if you like.
THE COURT: I'd like to know if he read it.
MR. BIERSTEKER: Okay.
BY MR. BIERSTEKER:
Q. Doctor, did you read the document?
A. No.
Q. Have you read any reports by the federal government about the extent of undetected fraud in the Medicaid program?
A. I think the only reports I've read from the federal government have to do with Medicare, and

there were reports on the national Medicare system.
Q. Doctor, I'd ask you to turn to tab 21 in your notebook, the next tab, Defense Exhibit BY0 -- BY000008. Doctor, did you read this document?
A. No.
Q. This is a report on "MEDICAID FRAUD: A CASE HISTORY OF THE FAILURE OF STATE ENFORCEMENT, A STAFF STUDY BY THE SELECT COMMITTEE ON AGING FOR THE UNITED STATES HOUSE OF REPRESENTATIVES" dated March of 1982; isn't it?
A. Yes.
MR. BIERSTEKER: Your Honor, I would move the admission of BYM000433 as well as I now move for the admission of BY000008 on the grounds that they are public records under 803(8).
MR. HAMLIN: Your Honor, this -- the defense counsel has not established any kind of proper foundation with this witness to ask questions about any of these documents, and it should not come in under any of the rules.
THE COURT: Well I'll allow them as public records. I don't know if it's fair to ask him questions about it. He hasn't read them, counsel.
BY MR. BIERSTEKER:
Q. Doctor, isn't it true that in the federal

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - industrydocuments.ucsf.edu/docs/lsgd0001

government's report at page 10 --
A. This is tab 21 now?
Q. Tab 21, yes, sir. And in the last full paragraph on the page, the last sentence, doesn't this report state, quote, "The best estimates place the extent of fraud and abuse from 10 to 25 percent of the entire Medicaid program?"
MR. HAMLIN: Objection, Your Honor, foundation. It's also irrelevant. Doesn't have anything to do with Minnesota.
THE COURT: Okay. The objection is sustained.
MR. HAMLIN: If we could take this --
(Document removed from the display screen.)
BY MR. BIERSTEKER:
Q. Well doctor, why don't we look at what Attorney General Humphrey said. Return you to tab 20, please, and if you would go to page 31.
THE COURT: Counsel, if you're going to be inquiring about these reports, I think he should have a chance to read it.
MR. BIERSTEKER: I'll be happy to permit the witness to read it.
THE COURT: Well I really don't want to sit around and wait for him to read it. They're pretty

lengthy reports. Did you want to take a recess?
MR. BIERSTEKER: We can do that, Your Honor.
THE COURT: Do you want to take a recess?
MR. HAMLIN: Your Honor, they designated a great deal of documents, many of which have nothing to do whatsoever with Dr. Wyant's testimony, and I don't see why Dr. Wyant should be forced to -- to read documents that have virtually nothing to do with his opinions in this case. I think counsel is simply interested in showing documents to the jury through Dr. Wyant, and I think that's improper. It's an improper use of the documents.
THE COURT: Well they've already been admitted, so the jury can read them.
MR. HAMLIN: All right.
THE COURT: The question is if you're going to ask him questions, I think he should have a chance to read the document.
MR. BIERSTEKER: Let me -- maybe what I could do is ask a more general question.
THE COURT: Okay.
MR. BIERSTEKER: Just to wrap this up.
BY MR. BIERSTEKER:
Q. Dr. Wyant, do your calculations take into

account the extent of undetected fraud and abuse in the Medicaid program here in Minnesota?
A. Well as I say, I reviewed the system for tracking this, and it's apparently quite a

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://industrydocuments.ucsf.edu/docs/lsgd0001

sophisticated system, so I have no reason to believe there's any great amount of these dollars in our estimates. But I do rely on that system upstream from the data we're using to detect things like fraud and abuse, although of course there are checks as we've seen in our validity screens for errors and the like in that data.
Q. Did you ever read any government reports about fraud and abuse in the Medicaid program?
A. I briefly examined some, you know, internal reports for part of this system I was talking about, just familiarizing myself with it.
Q. You don't really know, do you, whether -- what the extent of undetected fraud and abuse is in the Medicaid claims data upon which you relied?
A. I have nothing to add to what I've already answered.
Q. Do you know whether or not in 1995 the state of Minnesota paid over six million dollars to a doctor for a 61-dollar office visit?
MR. HAMLIN: Objection, Your Honor,

assuming facts not in evidence.
THE COURT: Sustained.
Q. Why don't you turn to tab 22 in your book.
MR. HAMLIN: Can we have an exhibit number on that?
MR. BIERSTEKER: Oh, I'm sorry. I apologize. Exhibit BYM000382.
Q. Did you find it, doctor?
A. Yes.
Q. This exhibit is a financial --
It's a report from the Financial Audit Division of the Office of the Legislative Auditor here in the state of Minnesota.
A. Yes.
MR. BIERSTEKER: Your Honor, I would move the admission of BYM000382 on the basis that it's a public record.
MR. HAMLIN: Once again, Your Honor, I don't believe that it has any relevance to this witness's testimony, and so I don't think it ought to come in.
THE COURT: Court will receive BYM000382.
BY MR. BIERSTEKER:
Q. Did you read this document, doctor?
A. I glanced at this.

Q. Did you read the language appearing at the bottom of page 10 and continuing over onto the top of page 11?
A. Yes. This had to do with the introduction of a new system, MMIS II, and these are some monies that I understand were recovered by the state. And part of the reason for the introduction of MMIS II -- it's one of the two computer systems that we used to get our data from, and that was a new system put in

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Tobacco Industry Documents Library http://www.industrydocuments.ucsf.edu/docs/lsgd0001

place, I think, about 1994, and I believe -- it's my understanding that one of the reasons for putting this system in place was for improved performance of error detection and fraud programs. And in fact I believe that the -- that the Medicaid -- the state Medicaid system in Minnesota has had the best record in the country after installing this system on detection of errors.

And that this is a natural -- in my experience anyway, when a big, new system is put into place, there may be glitches like this, but it's my understanding that this -- all this money was in fact recovered in the system.

Q. It was recovered because the doctor was honest and paid it back; right?

A. Well that's true. But in my experience with

these systems, I mean part of that may well be attributable to sanctions and penalties and the facts that there are -- or there is an operating detection system of the kind we've been talking about in place.

Q. And I believe you mentioned this in one of your answers just a moment ago, but the new MMIS system was put in place in June of 1994; right?

A. Well they were having a lot of problems when we were over there, so I couldn't speak to a date where it actually was fully operational.

Q. It was in 1994, however; correct?

A. Well approximately 1994.

Q. This payment was made in July of 1995; wasn't it?

A. I don't know.

Q. Doesn't it say that at the bottom of page 10 of the legislative auditor's report?

A. I'm sorry, page 10?

Q. Bottom of page 10.

A. Yes.

Q. Did you do -- oh, I'm sorry. I should look before I speak.

(Witness's water glass filled by the bailiff.)

Q. Did you do anything to analyze whether or not

the treatment paid by the state and Blue Cross Blue Shield of Minnesota were the least expensive appropriate treatments?

MR. HAMLIN: Objection, irrelevant.

THE COURT: You may answer that.

A. I don't know if that was --

I don't know every detail of these systems. I don't know if that was one of the checks, although I'm not quite sure from my limited experience with this kind of thing how you would do that. But -- but I don't know that.

Q. Do you know whether the state of Minnesota audited the accuracy of the diagnostic information contained in the claims data?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://www.industrydocuments.ucsf.edu/docs/lsgd0001

A. I know that parts of the system did check on that, yes.
Q. Doctor, why don't you turn to your deposition, volume one, page 118. And if you'd turn to line five, please. At your deposition, sir, did I ask you this question:
"...does the state, in its audits, do anything to determine whether or not the doctor might have made a mistake in writing down a particular diagnosis?
"Answer: I don't know which, if any, of their

audits would address a mistaken diagnosis of that sort."
MR. HAMLIN: Objection, Your Honor --
Q. Is that the question asked of you and the answer you gave at your deposition?
MR. HAMLIN: That's an improper use of the deposition. That's not an impeachment.
THE COURT: Sustained.
BY MR. BIERSTEKER:
Q. Doctor, in any event, for the reasons that you discussed yesterday, the diagnostic information contained in the claims data was not sufficiently complete or reliable, was it, to identify the money that the state and Blue Cross and Blue Shield actually spent the treat specific smoking-related diseases; correct?
A. Those are your words, not mine. It was sufficiently reliable and complete for the purposes of the system. And they don't run the Medicaid system in the state of Minnesota with the idea that it should maximize the convenience of some statistician wandering in at some time in the future. It's used to actually pay bills and it's reliable information for that. And as with every project like this, when you come in as a statistician, you take

that information --
It's a good thing it's used to pay bills. It's a good thing it's used in everyday practice. That's the kind of information you most want to see because that's, in a sense, automatically checked every day by the people using the system. And the challenge to a statistician which is always in there -- it's not a problem, it's part of the everyday trade craft -- is to take that information and make reasonable use of it. And that's exactly what we did with the validity screens we're talking about.
Q. All right. Let me -- let me ask this question: There are whole categories of expenditures, such as for prescription drugs, for which there's no diagnostic information at all; right?
A. In general that's correct, yes.
Q. And are often multiple diagnostic codes listed for a particular hospital stay or doctor visit; right?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

A. I believe the MMIS system will accommodate two -- excuse me, the MSIS system will accommodate two.
Q. And so when somebody goes in and they have two diagnoses, you can't really tell what money was spent for diagnosis number one and what money was spent for

diagnosis number two; right?
A. That's in general correct for these kinds of billing systems.
MR. BIERSTEKER: Your Honor, I'm not a logical break point. I don't know if you wanted to take an afternoon break or if you wanted me to push into a new area. I'm perfectly happy to do what the court desires.
THE COURT: Then we'll take a short recess.
THE CLERK: Court stands in recess.
(Recess taken.)

(The following discussion was had in open court but out of the presence of the jury and the judge.)
THE CLERK: This is in response to an inquiry by defense counsel regarding a side bar that was held on the 23rd of February and a question that was posed before a break, and that this questioning -- you can correct me if I'm wrong -- regarding, quote, unquote, advisory opinion or some type of guidance on questions to be raised. Is this correct? Is that a correct characterization of what you said about questions being raised?
MR. BIERSTEKER: Well let me -- let me just say it as how I see it. The judge indicated at a side bar, I believe on the 23rd --
THE CLERK: That's correct.
MR. BIERSTEKER: -- that certain questions in a certain area, if asked, might result in a prejudicial instruction to the jury on a particular matter. It is unclear to me, based upon the Judge's rulings, exactly what I can and cannot ask in that area, and rather than risk a prejudicial instruction to the jury, I would like to advise the court of what I intend to ask and to be informed whether or not the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://www.industrydocuments.ucsf.edu/docs/lsgd0001

questions that I would like to ask are appropriate or inappropriate, and then I will only ask the ones that His Honor says are appropriate.

THE CLERK: Mr. Hamlin.

MR. HAMLIN: Yeah. The court's order of February 19th is clear on this point, that the plaintiffs are not required to show that damages are clearly distinct, that the burden is on the defendant. There's absolutely no misunderstanding on our part as to what that means. The judge's order is clear, and we object strenuously to counsel seeking advisory opinions about questions that he may or may not ask. And frankly, in our view, counsel proceeds at his own risk if he even tries to raise this question.

Furthermore, it is very clear that what they are trying to do here is in one way or another suggest that plaintiffs did not meet their burden and that we didn't use something we should, and that is a clear violation of the court's order.

MR. BIERSTEKER: I'd like to briefly respond.

THE CLERK: Yeah, very briefly.

MR. BIERSTEKER: Number one, I'm not trying to make any such implication, I'm only trying to establish what the model does and what the model does

not do. Number two, I think it's perfectly understandable that I want to seek guidance before I ask a particular question given the judge's indication that if we go too far in this area, he's going to instruct the jury in a way that would be prejudicial to our case. Number three, there are some questions, for example, that I think go to the heart of some of the factual issues here that the judge's order does indicate are to be decided after the presentation of the evidence. For example, the plaintiffs have taken the position that the injury is indivisible and it's impossible to divide it. However, I think I should be free to ask their expert witness whether or not they even attempted to try to divide the injury. And that fact, I think, is an important fact, and it is nothing more than that. And in fact I'll be happy to say, even before I ask my questions, that I'm not suggesting that you should have done this, but what I want to know, doctor, is did you do this. That's -- I just want to establish those kinds of facts, and I'm not trying to create any implication one way or the other. But I don't want to have a severely prejudicial instruction given to the jury when I'm not -- I'm trying very hard to be within the four corners of the court's order.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - industrydocuments.ucsf.edu/docs/lsgd0001

THE CLERK: Okay. At this time the court is aware of counsel's concerns. However, the court has made it clear what his position is with respect to this issue and at this point advises counsel to continue at your peril.

MR. HAMLIN: Thank you.

THE CLERK: Next. This is somewhat of a formality to respond to a question raised by defense counsel Jonathan Redgrave with respect to passes, court passes. There have been some requests for additional court passes. Defendants have apparently been walking off with some, what have you. At this time we just need to know, however, how many you need for gallery only versus gallery -- well only for the purposes of security concerns so that we don't have an overflow problem. Okay? So if you are able to represent at this time how many you need, that would be very helpful.

And then I just want to let plaintiffs know that in the event you are also needing any additional passes, to make that information known to us and we will be able to accommodate both parties. But we just need to know.

MS. NELSON: And my understanding is this is just a request for additional badges, but that the

allocation of seating in the courtroom won't change.

THE CLERK: That's correct, the allocation will remain the same.

MR. REDGRAVE: That's my understanding. And as far as the number, we were going to change our allocation system the way it is and have, if we could, 10 additional passes that are always on site that people cannot leave the premises with, and that would fill in for when people who have passes now take them off site and we aren't able to transfer them. So it's 10 gallery passes. I do not know if we need any more well passes or not. If that's something that turns out, that people who have the well passes lose them, I can come back later. I'd rather just get gallery passes and not have well passes. And just have 10 more gallery passes just so the guards always know that who is coming in is properly in those rows there.

THE CLERK: Okay. Do you have any idea, then, now, how many gallery passes you have?

MR. REDGRAVE: Remaining?

THE CLERK: Uh-huh. Yes.

MR. REDGRAVE: Well we were originally given -- I can't remember the number we were given. I think we have --

Well we were given 30 passes originally. How many are still in usable form that people have? I think around -- I got to guess -- 20, but -- or 25, but I think some people might have them in New York. I mean that's my problem, I can't --

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://industrydocuments.ucsf.edu/docs/lsgd0001

THE CLERK: Okay. Okay. At this time we will make 10 gallery passes available to defendants. So plaintiffs are aware, and in the event you have a similar request, you let us know.
MS. NELSON: Okay. We'll be glad to.
MR. REDGRAVE: I appreciate that.
(Conference concluded.)

THE CLERK: All rise. Court is again in session.
(Jury enters the courtroom.)
THE CLERK: Please be seated.
THE COURT: Counsel.
MR. BIERSTEKER: Thank you, Your Honor.
BY MR. BIERSTEKER:
Q. Doctor, does it matter to your calculations why individuals smoke?
MR. HAMLIN: Objection, Your Honor, I believe that that may involve the court's rulings.
MR. BIERSTEKER: Your Honor, I believe this question was permitted with Dr. Zeger.
THE COURT: You may answer that.
A. No, we didn't look at why people smoked. We looked at people in these programs and looked at smoking-attributable expenditures, just taking them as they came.
Q. Does it matter to your calculations when people here in Minnesota smoked?
A. I'm sorry?
Q. Does it matter when people here in Minnesota smoked, from what years?
A. Well we certainly adjusted for proportions of smokers in different years using the Behavioral Risk

Factor Survey, so we were always trying to be as accurate as possible in reflecting the smoking prevalence in the Minnesota population.
Q. Let me ask the question maybe somewhat differently.
For those models that compared ever smokers, those are people who smoked 100 cigarettes or more at some point in their lifetime; right?
A. That's correct.
Q. Does it matter when those cigarettes were smoked

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

to your calculations?
MR. HAMLIN: Objection, asked and answered.
THE COURT: Well you may answer.
A. We look at people who answer these standard questions, and if they answer them did you ever smoke more than a hundred cigarettes, then we consider them smokers in terms of using these survey data sets.
Q. Does it matter to your calculations why a person quits smoking or why a person did not quit smoking?
A. I can't think of any right now. Again, we just take people in these data sets and look at smoking-attributable expenditures year by year.
Q. Does it matter to any of your calculations when a person here in Minnesota quits smoking?
MR. HAMLIN: Objection, asked and answered.

That's the same question.
THE COURT: You may answer that.
A. I -- I think it's the same answer.
Q. And that was it doesn't matter?
MR. HAMLIN: Objection, mischaracterizes Dr. Wyant's answer.
THE COURT: Sustained.
Q. Would you mind repeating your answer, please?
MR. HAMLIN: Well seems to me, Your Honor, that the court reporter can read the answer back.
MR. BIERSTEKER: Fine.
THE COURT: Well -- or he can repeat it. You take a shot.
THE WITNESS: I'm sorry?
THE COURT: Do you remember what you said?
A. We define people as smokers in our use of these data sets using the question: Did you ever smoke a hundred cigarettes or more in your life? Those people are considered smokers.
Q. Now doctor, you determined the relationship between smoking and health-care expenditures and other characteristics for different models in your national data sets; right?
MR. HAMLIN: Objection, Your Honor, that is a mischaracterization of his testimony.

THE COURT: Rephrase the question, counsel.
Q. Doctor, isn't it true that you used the National Medical Expenditure Survey to determine the relationship between smoking and disease and certain -- certain personal characteristics and medical expenditures?
A. We certainly used the data set to measure the extent to which there were such relationships in these data.
Q. And the National Medical Expenditure Survey is a national survey; correct?
A. That's correct.
Q. And you did not use the Minnesota telephone survey, the BRFSS survey, to determine the relationship between smoking and expenditures in the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacy.library.ucsf.edu/docs/lsgd0001

full model; did you?
A. Well in a sense we certainly did. And rather than determining the relationships, we're really measuring the extent, and we use the National Medical Expenditure Survey to measure the extent within certain groups. But of course there may be different numbers of people in those groups in Minnesota than in the national survey, and so that's why, for example, the three reduction factors all take into account both the national surveys and the Minnesota

surveys.
Q. Doctor, would you turn to your deposition, volume three at page 362, line 11.
A. I'm sorry, what's the page?
Q. 362, sir. Have you got it?
A. Yes.
Q. Doctor, didn't I ask you in your deposition in January of this year the following question:
"Now, you did not use the BRFSS, B-R-F-S-S, to determine the relationship between smoking and expenditures, right?
"We could not use -- well, on the full model" --
This is your answer. Excuse me.
"Answer: We could not use -- well, on the full model, we did not use BRFSS for that."
Is that the question I asked and the answer you gave?
MR. HAMLIN: Objection, Your Honor, that is a misuse of the deposition. Dr. Wyant has defined exactly the use of BRFSS.
THE COURT: You may answer that.
A. I said this again is exactly consistent with what I'm saying here, there's -- you measure the extent of the condition -- of the relationship using the national survey data for different groups, and

when we go to find out where those relationships should be applied in Minnesota after we've determined their extent or measured their extent, we do use the Behavioral Risk Factor Survey to see whether there are more people in Minnesota, for example, in one of those groups than in one of the national groups.
Q. Let me see if we can explore that. You look at your national data and you decide -- you find, after you do all of the analyses that you do, that if a person is a male 19 to 34 and they smoke and they don't wear their seatbelt and they're of normal weight, et cetera, that their expenditures, just hypothetically, are 10 percent higher than a non-smoker who has the same age and the same seatbelt characteristics and same weight; right?
MR. HAMLIN: Objection to form, compound question.
THE COURT: Did you follow the question, sir?
THE WITNESS: Not really.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. Let me ask the question maybe a different way.
The percentage of expenditures attributable to smoking in each of your different groups is determined entirely in your national data set; correct?

A. Well what do you mean by "groups?" If we're talking about groups of similar characteristics, the percentages, I believe, do come from National Medical Expenditure Survey, but all of those groups, of course, are matched up with claims data and using the Behavioral Risk Factor Survey.
Q. But the percentage is determined entirely in the national data set; correct?
MR. HAMLIN: Objection, asked and answered.
THE COURT: I think he answered it.
Q. Isn't it true, doctor, that you did not use the claims data in any way to measure the extent of any relationship between smoking and expenditures?
MR. HAMLIN: Same objection, Your Honor, that's asked and answered.
THE COURT: No, you may answer that. You may answer.
A. Well I don't know quite how to separate that out. The -- there's an extent of the connection in a group that comes from the national survey, but the extent to which that has any practical importance in Minnesota has to rely on claims data and the Behavioral Risk Factor Survey data, so I'm not quite sure how to split it out any better than that.
Q. Again, doctor, why don't you turn to your

deposition, the same volume, volume three, at page six -- 363, the very next page.
A. I'm sorry, where?
Q. 363, volume three.
Didn't I ask the question, with a long prelude:
"Question: I'm not talking about your smoking attributable expenditures or even your SAFs. I'm talking about to determine the relationship between smoking and expenditures, all right, now, did you use the claims data in any way to determine the relationship between smoking and expenditures?
"Answer: I don't believe we used that data in the full model to measure the extent of any relationship between smoking and expenditures."
Is that the question I asked and the answer you gave in your deposition in January in this case?
A. Yes.
Q. In fact, doctor, if there was one thing about NMES that you could have changed, if a genie had come out of the bottle, you would have made NMES a Minnesota survey instead of a national one; right?
MR. HAMLIN: Objection, relevance and foundation.
THE COURT: Sustained.
Q. You took the results from your national survey

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Digitized by the Tobacco Industry Documents Library http://www.industrydocuments.ucsf.edu/docs/lsgd0001

and applied them here in Minnesota; correct?
A. That's correct.
Q. And you wanted to know whether or not that was a reasonable thing to do; right?
A. I'm not sure how to answer that. All of our methods and our analysis incorporate in some way, in our backgrounds and experience, that this was a reasonable thing to be doing.
Q. Well one of the things you did was to compare Minnesota to the rest of the United States with respect to certain characteristics; right?
A. That's right.
Q. And you discussed some of those with the jury in your direct testimony; right?
A. That's right.
Q. Now at the time that you applied your model to the Minnesota Medicaid population, you hadn't made any comparison between Minnesota Medicaid and your national survey; had you?
A. I'm sorry, could you ask that again?
Q. Yes.
At the time you applied your model to Minnesota Medicaid, had you made a comparison of the Medicaid and the non-Medicaid populations in the same way that you did for Minnesota and the United States?

A. I'm sorry, I'm missing something here. I mean we --
I did show some comparisons related to Minnesota Medicaid and the United States, and we certainly did those comparisons.
Q. Yes. You compared Minnesota Medicaid to the U.S. Medicaid population; right?
A. Yes.
Q. On certain limited characteristics, pattern of expenditures and smoking prevalence; right?
A. Yes.
Q. When you made your estimate with your full model, though, you used the entire NMES survey, the people who were on public aid and the people who weren't; right?
A. They were --
Well, there may have been some groups left out, but I think in general in using the various models we looked at people with private insurance and people with public insurance.
Q. Well that wasn't true with respect to self-reported health status; right, in the full model?
A. The particular formulas in the full model that looked at self-reported health status, those did not

have a factor in them for type of payment program.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Q. And in addition, even where your model had a factor for whether somebody was on Medicaid or not on Medicaid, and private insurance, that's not the same thing as estimating your model only on people who were on Medicaid; is it?
A. No. But it's certainly a common and -- and reasonable way to make that kind of estimation where you're making better use of your full data, then using the statistical methods to get a reasonable estimate of what's going on in the two different programs.
Q. Doctor, one of the exhibits that you discussed in your direct examination was Plaintiffs' Exhibit 26053. I think you'll find that at tab 24 in your book. It's the list of publications based upon the National Medical Expenditure Survey.
A. I'm sorry, what tab?
Q. I think it's tab 24.
Doctor, did you -- did you read the literature that you included in this list of publications?
A. No. I --
This was intended as an example to show the National Medical Expenditure Survey is frequently used as the basis for analysis and research.

Q. Do you know whether or not, when the Agency for Health Care Policy and Research of the United States Department of Health and Human Services uses the NMES data and wants to do an analysis of the Medicaid population, whether they only look at the Medicaid group of people in the National Medical Expenditure Survey?
MR. HAMLIN: Objection, foundation, it's assuming facts not in evidence. Counsel is testifying again.
THE COURT: You may answer if you know it.
A. No, I don't know that.
Q. Did you read either of the articles found at tabs 25 and 26 in your notebook that were cited in the list of literature that you talked about?
MR. HAMLIN: Can you give us an exhibit number, please?
MR. BIERSTEKER: Oh, I'm sorry. Exhibit CN52 and 51.
A. And which of the articles are we looking at here?
Q. The first was a paper by a Mr. Cohen -- Dr. Cohen, who is the senior research manager at the Division of Medical Expenditure Studies at the Agency for Health Care Policy and Planning. Do you see that one?
I can get the title. Just a minute. It's entitled "Medicaid Physician Fees and Use of Hospital Services."
A. Was there a second one you mentioned?
Q. Yes. It's the tab immediately --

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

Well let me ask the question first. Did you read this article?
A. I don't recall.
Q. Do you know if Dr. Cohen is a reliable authority concerning the National Medical Expenditure Survey?
A. I have no reason to say he's not. This particular survey, of course, was not looking at something like smoking and disease or conditions that might lead one to be on Medicaid, this is just a study of physician services given the fact that you're already on Medicaid.
Q. This was a paper to examine how physician fees affect the use of physician and hospital services under the Medicaid program; right?
A. Yes.
Q. Do you know whether or not, in doing that analysis, Dr. Cohen used as his unit of analysis those people in the National Medical Expenditure Survey who were on Medicaid all year?

A. He may have.
Q. All right. Let's look at the next article. This is an article by the same Dr. Cohen and a senior researcher, Peter Cunningham, at the Agency for Health Care Policy and Research, that appeared in Data Watch, the Health Affairs journal, in the spring of 1995. Did you read this article?
A. Is there a number in here, or is this --
Q. It's tab --
It was the very next tab, doctor. I think it's tab 26.
A. Oh, I'm sorry. Certainly did not read this in its entirety. I may have glanced at it at some point.
Q. Is the journal of Health Affairs a reliable journal?
A. I believe so, yes.
Q. And are Dr. Cohen and Dr. Cunningham authorities when it comes to the National Medical Expenditure Survey?
A. All I can tell you is I recall seeing their names associated with publications about it, and if he's listed as senior research manager at the Agency for Health Care Policy Research, so based on that I would say yes.

MR. BIERSTEKER: Your Honor, I would move the admission of defense Exhibit CN000051 as a learned treatise.
MR. HAMLIN: Your Honor, proper foundation has not been laid. Dr. Wyant just testified that he's glanced at the article, he hasn't read it. Whether the journal is reliable is not the question for foundation, the question is whether the paper is, and since this witness hasn't read it, there's no foundation.
THE COURT: Court will receive CN000051.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://tobaccodocuments.ucsf.edu/docs/lsgd0001

BY MR. BIERSTEKER:
Q. Now doctor, this is a study examining the effects of physician fees on children's use of preventative and illness-related ambulatory physician services under Medicaid; right?
A. That's what it appears to address.
Q. And it uses data from the National Medical Expenditure Survey; right?
A. Yes.
Q. And to examine that question, the authors -- if you'll turn to page 256 under data sources. Do you see the heading on that page, doctor?
A. Yes.
Q. And about the third line into that paragraph,

right after the footnote, footnote four, does it say, "The sample for this study consisted of 1,333 children under the age of 18 who were covered by Medicaid for all of 1987?"
A. Yes. And again, this study appears to be one of focusing on expenditures and access to people once they're on Medicaid.
Q. Doctor, would you agree if you want to know about Medicaid, you should look at Medicaid people?
A. I agree that's one of the things you should look at.
Q. Now none of your models compares the medical costs of all the smokers and non-smokers who are on public aid in the National Medical Expenditure Survey using one methodology; right?
Let me ask the question over. You've got a frown on your face and it wasn't very good.
None of your computations that you did for this case compared the medical costs of smokers and non-smokers who were in the public aid group of the National Medical Expenditure Survey using one methodology; right?
MR. HAMLIN: Objection, Your Honor, foundation.
THE COURT: You may answer that.

A. I'm just not sure what you mean by "using one methodology."
Q. Using a consistent -- using one methodology. Well let me give some examples.
Did you perform a regression analysis only on the public aid recipients in the National Medical Expenditure Survey in comparing all the smokers and all of the non-smokers?
A. I performed such analyses. I don't believe they're in the refined model.
Q. Were they thrown away?
A. No.
Q. Were they disclosed to the defendants?
A. No.
Q. Do you know whether the defense experts performed a regression looking at the public aid

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

recipients in the National Medical Expenditure Survey and comparing smokers and non-smokers?
A. No, I don't recall.
Q. Did you ever look at the depositions of the 15 Medicaid recipients in this case?
A. I think I saw those at one point, or at least some of them.
Q. Did you do any analysis based upon those 15 depositions?

A. No.
Q. You testified in your direct examination about the Dalkon Shield litigation or trust fund that you were involved with. Do you remember that?
A. Yes.
Q. When you were trying to decide how much money to pay to individual claimants who filed a claim with the trust fund, did you look at their medical records?
A. Yes. Or I and trust employees did, yes.
Q. When you estimated the total amount of money that should go into that settlement fund, did you look at the medical records of a sample of the people who had previously pursued litigation against the manufacturers in that case?
A. This is switching a little bit back into the litigation from the trust. In the course of the litigation there was a sample of previous records -- of claims that were settled prior to the bankruptcy.
Q. And were those previous records, did they include medical records?
A. Yes.
Q. And did you or people on your team look at those medical records in making an estimate for the total size of the settlement pool?

A. Various people looked at those records, yes.
Q. Do you recall what the estimate that your team -- let me start that question over.
Do you recall what the estimate was that your team came up with in that matter?
A. By my team, you mean --
Q. Well you worked for the claimants; is that correct?
A. That's correct.
Q. What was the claimants' suggested --
What was the claimants' estimate of the size of that settlement?
MR. HAMLIN: Objection, Your Honor, I think that's irrelevant at this point.
THE COURT: Yeah. We're starting to wander here, counsel. I wonder if we can come back to this case.
Q. You talked in your direct testimony, doctor, about the Minnesota telephone survey, the BRFSS survey, and how you looked in that survey at alcohol and exercise. Do you remember that testimony on

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://www.industrydocuments.ucsf.edu/docs/lsgd0001

direct?
A. Yes.
Q. Isn't it true that if you look at the public aid smokers in that telephone survey, that the smokers

report going to the doctor less often than the non-smokers who are on public aid?
MR. HAMLIN: Objection, assuming facts not in evidence, foundation. Counsel is testifying.
THE COURT: Rephrase it.
Q. Do you know whether or not the public aid smokers in that Minnesota telephone survey report going to the doctor less often than the non-smokers in that Minnesota telephone survey?
A. No, I don't know that.
Q. Do you know whether the public aid smokers in that Minnesota telephone survey report that they were less likely to have gone to the hospital in the previous year than the non-smokers report?
A. No, I don't know that. But even if I did know that, those kinds of things are seldom very reliable unless you know exactly how the calculations were made in terms of adjusting for age and other factors.
Q. Do the defense experts address that issue?
A. I don't recall.
Q. Let's talk for a minute about the uncertainty in your estimates. And I may need to put up this easel where you did some drawings.
Oh-oh, I see disaster coming. I guess it would help if you could see it. Can you see it, doctor? I

may have turned it too far. Everybody got it?
Now in this example you reported that your relative error for your estimate for major smoking-attributable disease expenditures was 41 percent; right?
A. That's correct.
Q. And your estimate there is 558 million dollars; correct?
A. That's correct.
Q. And you calculated what you called a confidence interval on that estimate, you said it's somewhere between 328 million and 788 million; right?
A. That's correct.
Q. And what was the confidence level that you used to calculate that interval?
A. If you were going to use the normal procedures here, you would call that about, I think, a 68 percent confidence interval. I'm obviously doing some mental arithmetic here, but --
Q. Doctor, you talked about a number of different published peer-reviewed materials during the course of your testimony. Did any of those publications use a 60 percent confidence -- 68 percent confidence level?
A. I don't know if any did, but of course the one

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

that -- that I rely on the most for this particular situation suggests that it -- it doesn't matter because it doesn't really affect what you're doing. When you're looking for a best estimate here, that it's just not important and doesn't matter what the confidence intervals are.

Q. Doesn't matter how big the error is.

A. That's correct.

Q. Well isn't it true, doctor, that the lion's share of the articles that we've talked about during the course of your testimony use a 95 percent confidence level?

MR. HAMLIN: Objection to form.

THE COURT: You may answer that.

A. I don't know about lion's share of the articles that we talked about. Certainly given there are many situations out there, a 95 percent confidence interval is commonly used, although many of those situations, and I think probably none of them in the articles we talked about, except the one I just mentioned, talk about confidence intervals in a situation where you're estimating damages.

Q. Is there a lower standard when you're asking defendants to get out their checkbook and write a check for 1.77 billion dollars than there is when

you're publishing an article in the peer-reviewed literature?

MR. HAMLIN: Objection, Your Honor, argumentative.

THE COURT: It's argumentative. Rephrase it.

Q. Doctor, isn't it true that the Framingham study on Medicare costs use a 95 percent confidence level?

A. For what they were doing, yes.

Q. Isn't it true that the study concerning the risk profiles for nursing home admission used a 95 percent confidence level?

A. Confidence levels at the 95 percent level were used in that article, yes.

Q. Isn't it true that the study on -- the Framingham study again, for stroke, used a 95 percent confidence level?

A. Again, none of these articles has anything to do with the estimation of damages and none of them lays out a foundation of causation such as we have laid out with Dr. Samet on which to base our estimation of damages. I'm not sure that any of these comparisons are really relevant.

Q. I just want to establish what they used, doctor. Did the Surgeon General's report in 1989 use a

95 percent confidence level?

A. I believe there were tables in there that used a

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001

95 percent confidence level.
Q. Did the nurses study that you talked about in your direct testimony use a 95 percent confidence level?
A. I don't recall.
Q. Didn't you use a 95 percent confidence level in the chapter in the book that you wrote about blacks and whites and how long they wait to get kidneys?
A. I probably reported 95 percent confidence intervals, but again, those are in a situation where you're asking a yes/no question, you're not taking causation from medicine and laying down a foundation. It's a very different kind of application from what we're talking about here.
Q. Is there no yes/no questions you want to know the answer to?
A. What we're trying to do here is estimate a measure of the dollars attributable to smoking based on the medical foundation of causation and disease laid out by Dr. Samet.
Q. Doctor, do you want to know the answer to this question: Is my 1.77-billion-dollar damage estimate reliable? "Yes" or "no."

A. It's a reliable estimate.
Q. And one way to test that is to use these kinds of confidence levels -- or to use the 95 percent confidence level and to look at the confidence interval; isn't it?
A. It's not a test. That's one way one could summarize these. As I testified earlier, I didn't think that was an appropriate way, and I believe that I'm supported in that -- or rather supported at least that there's certainly no precedent for doing that as a critical part of a damages estimate by the Panel on Assessment of Statistical Evidence. What these are is one measure of what part of the model most variability is in, and many sources of reliability relate to comparisons with other work, with the medical foundation that's laid down, with all the medical articles that preceded that medical foundation, and factors of that sort.
Q. What I'd like to do is if we used the 95 percent confidence level, the plus or minus on this 558-million-dollar estimate for major smoking-attributable disease expenditures would be approximately twice as great. Instead of 41 percent, it would be 82; correct?
A. That is correct.

Q. And if I've done the math correctly, the upper estimate would be 866 million dollars -- no, excuse me, I'm looking at the wrong line. The upper estimate would be a billion dollars, approximately, and the lower estimate would be 100 million; is that correct?
A. And those estimates would all be derived based

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/lsgd0001

on hypothetical surveys that have never been taken.
Q. This is based on hypothetical surveys that have never been taken; isn't it, doctor?
A. Absolutely.
Q. All right. We talked about the major smoking-related disease estimate. Now let's talk about the reported poor health estimate.
If we used the most common 95 percent confidence level, the plus or minus wouldn't be 42 percent, it would be plus or minus 84 percent of your estimate; correct?
A. That is correct.
Q. And your estimate for reported poor health is 476 million dollars; correct?
A. That sounds approximately correct. I can look it up if you'd want.
Q. If we applied the plus or minus 84 percent to that, the lower end of the confidence interval would

be about 85 million dollars; wouldn't it?
You want a calculator?
A. I think the upper end would be probably in excess of 700.
Q. That's correct.
A. Just from quick mental arithmetic.
Q. And the lower would be about 85 million?
A. That sounds roughly right.
Q. Okay. Now let's talk about your other diminished health estimate. If we applied the most common 95 percent confidence level test to that, it would be plus or minus 308 percent; is that right?
A. That's correct. Although, again, it's a little odd to be talking about common confidence levels when we are talking about damage estimates, in which, as I testified, and again consistent with the Panel on Assessment of Statistical Evidence, confidence intervals aren't usually -- if you're going to talk usual, confidence intervals aren't even usually calculated and often can't be calculated.
MR. BIERSTEKER: Your Honor, I move to strike the last portion of that testimony as unresponsive to the question.
THE COURT: No, it will stand.
Q. If we took plus or minus 308 percent for your

other diminished health estimate, do you know what the range would be?
A. No.
Q. Would it be approximately 1.9 billion dollars to minus 961 million?
A. That could be. It would reach zero, as we said yesterday. And given the medical foundation, those are not reasonable values. It is certainly true that it's possible that the smoking-attributable dollars in Minnesota are higher than what we're talking about here, but the best and most reasonable estimates are those we've presented.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Tobacco Industry Documents Library at UCSF http://tobaccodocuments.ucsf.edu/docs/lsgd0001

Q. You know, you said that they're the best estimates and you said they were the most likely?
A. Correct.
Q. How likely is your diminished health -- your other diminished health estimate of approximately 476 million dollars?
A. I think the most likely.
MR. HAMLIN: Objection to form.
Q. "Most likely." What's the probability associated with that estimate?
A. Higher than any other value.
Q. Do you know if it's less than one in a billion?
A. That's a nonsense question in statistics,

because if you think about all the possible numbers, say, just from one to a billion, by one dollar, the typical amount of probability on any particular one is going to be one in a billion starting out. If you'd go to the cent, it's one in a hundred billion. So talking about the probability of a particular estimate in these cases is just never done in my experience in these cases. You look for the most likely estimate.
Q. Don't you sometimes also look to the confidence interval?
MR. HAMLIN: Objection, asked and answered.
THE COURT: No, you may answer.
A. Not in damage cases, as I've said.
Q. All right. Let's just wrap this up. For nursing homes, you computed a relative there of 176 percent. At the 95 percent confidence level that would be in excess -- that would be a plus or minus in excess of 350 percent; wouldn't it?
A. That's correct.
Q. Do you know what the lower end of your nursing home estimate would be at that confidence level?
A. I think I testified that it would reach zero. I don't know exactly where.
Q. If I told you it was negative 600 and some odd

million dollars, would you have any reason to disagree?
A. I'm not going to disagree with your math here.
Q. Doctor, on direct examination you talked about your thesis. Do you remember that?
A. That's correct.
Q. And before chapter one you started off the thesis with a quote. Actually a couple of quotes. Do you remember the quote?
A. Yes. They were some quotes about liars and statisticians.
Q. And isn't the quote, the one that you started off with: "There are three kinds of lies: lies, damned lies, and statistics," by Benjamin Disraeli?
A. That's correct.
MR. BIERSTEKER: No further questions, Your Honor.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

MR. HAMLIN: Your Honor, I just need a moment just to gather my papers, and I'm ready to go with redirect.
THE COURT: Do you want a recess, or can we just wait?
MR. HAMLIN: Well maybe if we could take five minutes, that would help.
THE COURT: We'll give you six.

THE CLERK: Court stands in recess.
(Recess taken.)

(The following conversation was held in open court, without the jury or the judge.)
THE CLERK: This is just a clarification. Earlier I had cited February 23rd as the date of the side bar involving Mr. Garnick and involving your question to the court, and it actually was the 24th. I just wanted to make that clear for the record so there was no misunderstanding.
MR. BIERSTEKER: Thanks.
THE CLERK: Thank you.
(Conversation concluded.)

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

THE CLERK: All rise. Court is again in session.
(Jury enters the courtroom.)
THE CLERK: Please be seated.
THE COURT: Counsel.
MR. HAMLIN: Thank you, Your Honor.

REDIRECT EXAMINATION

BY MR. HAMLIN:
Q. Dr. Wyant, have you told the jury the very best work that you could do concerning the building of this statistical model?
A. Absolutely.
Q. And is it a lie?
A. It's a tremendous amount of work by many people.
Q. And is it a lie?
A. Excuse me. A lie?
Q. A lie.
A. No. Absolutely not.
Q. Let me direct your attention first to your deposition, page 362, line 22.
MR. BIERSTEKER: Your Honor, I object. I don't know why counsel can use the witness's deposition on direct.
MR. HAMLIN: Your Honor, I simply am going to read the question that preceded -- question and

answer that preceded the one that was read to the jury by defense counsel so as to make it clear that Dr. Wyant in fact testified consistently in his deposition.
THE COURT: Well all right. I think you should have asked for it at the time that the question was read from the deposition, but I'll allow it.
MR. HAMLIN: Thank you, Your Honor.
BY MR. HAMLIN:
Q. Do you have the page 362?
A. Yes, I do.
Q. Line 22.
A. Yes.
Q. "Question: Let's talk about the full model, that's what I was actually referring to. In the full model, you did not use the claims data to determine the relationship between smoking and expenditures, right?
"Answer: Well, they were used indirectly in measuring the total SAFs obviously because SAFs are applied to those expenditure data. To the extent that there are more expenditures in one category than another, that clearly affects the overall SAF."
Now what did you man by "SAF" in that answer?

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

MR. BIERSTEKER: Your Honor, there were other portions of the deposition that, if he's going to read that portion, I would like to have read.
THE COURT: Okay.
MR. BIERSTEKER: May I do it?
THE COURT: What -- what are you asking for, counsel?
MR. BIERSTEKER: Well I think that if we're going to read other excerpts, there's another excerpt that further clarifies this very point.
THE COURT: Okay. Is it the question before or the question after?
MR. BIERSTEKER: It's the question that immediately is after. It goes on for about three or four questions.
THE COURT: Well read the question before and the question after.
MR. BIERSTEKER: The one after I read. Mr. Hamlin, starting on line 16 on 363, through line five on 364.
MR. HAMLIN: It's on page 364?
MR. BIERSTEKER: 363, line 16, through 364, line five.
BY MR. HAMLIN:
Q. "In fact, you didn't use any Minnesota data at

all to determine the relationship between smoking and expenditures in the full model, right?
"Answer: I believe there are Minnesota respondents to the National Medical Expenditure Survey.
"Question: You used national data to determine those relationships, right?
"Answer: We certainly used the National Medical Expenditure Survey to measure the extent of those relationships.
"Question: And the National Medical Expenditure Survey is a national survey, right?
"Answer: That's correct.
"Question: And was not a Minnesota survey, correct?
"Answer: That's correct."
Now can you answer my question, Dr. Wyant?
A. This sequence of questions is simply repeating what I -- what I've tried to say today. In the National Medical Expenditure Survey, that's the one survey in these data sources where you have smoking and disease and expenditures, so within groups, that's the place where you measure the connection, but then when you go to apply the Minnesota data you have to see how this connection changes because

you've got people in different groups in Minnesota. You can see that from the Behavioral Risk Factor Survey, and you can see that from the Minnesota

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

claims data. And so the total application of the reduction percentages, which is basically what we mean by the SAF here -- smoking-attributable fraction -- involves all three data sources.

THE REPORTER: Dr. Wyant, there are two switches on the microphone.

THE COURT: Was the jury able to hear that answer?

(Affirmative response.)

Q. From whom did you receive information, specifically epidemiological information, regarding whether smoking causes people to enter nursing homes?

A. Information that I relied upon that addressed that question was from Dr. Jon Samet.

Q. And what did he tell you?

A. He said that smoking was a cause of stroke, this is one thing he told me, and that stroke can cause disabilities that in some circumstances would require nursing home care.

Q. In calculating the relative errors in this case, why didn't you use the 95 percent confidence interval?

A. Well I felt in this context the relative error is easily interpretable and it shows the typical variation you would get if these surveys were repeated.

Q. Were there any other reasons?

A. It's a measure that I've used before in reporting survey results, and it seems to be a clear way to kind of communicate things for comparison of one study with another or parts of a study to another.

Q. Now you made reference to a book that you relied on with respect to your opinion about whether confidence intervals were appropriate here?

A. Yes.

Q. What was that?

A. The book?

Q. Yes. I believe it's 26042.

A. I think it's 26046 maybe.

Q. Forty-six, yeah.

A. That's the book called "The Evolving Role of Statistical Assessments as Evidence in the Courts."

Q. And who was involved in authoring that book?

A. This is a product of the Panel on Statistical Assessments as Evidence in the Courts.

Q. Now Mr. Biersteker asked you about missing data.

Is it unusual in large data sets to have missing data?

A. In my experience they all have missing data. It's a common thing you have to deal with.

Q. Was there anything unusual about the data sets here with respect to missing data?

A. No, not in my experience.

Q. And are there accepted standard statistical

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

practices to deal with missing data in large data sets?
A. Yes.
Q. And can you tell me whether one of the tasks of statistical modeling is to deal with missing values in large data sets?
MR. BIERSTEKER: Objection, Your Honor, he's leading.
THE COURT: You are leading, counsel. Rephrase it.
MR. HAMLIN: I will, Your Honor.
BY MR. HAMLIN:
Q. Can you tell me what the purpose of statistical modeling is when it comes to using large data sets with missing values?
A. Well in statistical modeling there are methods available and commonly used to get the most

information you can out of the data sets in a -- in a reasonable way, taking into account that in some instances there are missing pieces of information in there.
Q. This is a common practice; right?
A. Absolutely.
Q. Dr. Wyant, do you need to know the individual identities of the smokers in the Minnesota claims data, both for the state of Minnesota and Blue Cross Blue Shield of Minnesota, in order to calculate your smoking-attributable expenditures?
A. No. That goes back basically to the first reduction that Professor Zeger talked about and I talked about, and that's used to get what you need to know, which is the percentage of smokers in whatever population you're addressing.
Q. And did you have information available to you to calculate the percentage?
A. Yes.
Q. And what information was that?
A. Behavioral Risk Factor Survey, and National Medical Expenditure Survey.
Q. Now defendants' counsel talked about a number of factors and whether they were in the model, and those included environmental factors, occupation, diabetes,

disability and others. How does plaintiffs' statistical model take these factors into account?
A. Well in a very important sense they're taken into account by the fact that in collaborating with people like Dr. Samet, we've built this model on a medical foundation, and part of that medical foundation has to do with the extent to which these kinds of factors need to be in models of the kind we were using.
Q. Now let me direct your attention to the 1989 Surgeon General's report, which is Trial Exhibit 3821, page 129. If we could have that on the Elmo.
That's the front page of the 1989 report, Dr.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lsgd0001

Wyant?
A. That's correct.
Q. Could you turn to page 129, and specifically could we focus in on the first sentence at the top of the page. Could you read that, Dr. Wyant.
A. "As discussed in Chapter 2, numerous attempts to control statistically for confounding and stratifying variables have not materially altered the estimated relative risks for cigarette-related diseases."
Q. Now have you reviewed chapter two?
A. Yes.
Q. Was one of the factors discussed there

occupational exposure?
A. Yes.
Q. And what did the Surgeon General say about occupational exposure?
A. The Surgeon General said that there was a synergy between cigarette smoking and occupational quantities such as asbestos or radon.
Q. Well what -- what did that suggest to you about using that variable; that is, occupational exposure, in plaintiffs' statistical model?
A. Well if -- if there is such a synergy -- and that's a word used by Dr. Samet also -- that to me, putting that in the model would -- would be a form of over-adjustment. Those are people who are more susceptible by the fact of their exposure to the effects of cigarette smoking, and it would be just not right to put a term for those as an explicit factor in one of our formulas.
Q. Now what do you mean by the term "synergy?"
A. Again, smoking and factors such as asbestos exposure work in concert, so that the effect of smoking on someone with that exposure may be much elevated over the effect on someone without the exposure.
Q. Did the Surgeon General also discuss air

pollution?
A. Yes.
Q. What did he say about air pollution?
A. I believe the indoor air pollution, as I recall, was related to radon, which we've just talked about. And outdoor air pollution, I don't believe there was found to be any significant associations.
Q. And what does that tell you about whether that factor should be included in plaintiffs' statistical model?
A. Well again, this is all just consistent with the foundation that -- that I got and our team got from Dr. Samet, and also with the summary of these conditions from the Surgeon General's reports.
Q. Did the Surgeon General also discuss coronary heart disease and factors associated with that disease?
A. Yes. And that was in chapter two also. And I

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Generated from tobaccoindustrydocuments.ucsf.edu/docs/lsgd0001

believe, again, the conclusion there was for a synergistic effect.
Q. Can you tell us what factors were discussed.
A. I believe high cholesterol and hypertension.
Q. Okay. Can you explain what you mean by a "synergistic effect" in that context.
A. Again, the same kind of thing where there's an

increased susceptibility, is one way to think of it, and smoking has a much greater effect on people who have these risk factors than on people who don't.
Q. And what does this tell you about putting a variable in the model for high cholesterol or hypertension?
A. Again, to me this would be an example of what Dr. Samet would call over-adjustment.
Q. Dr. Wyant, I'm placing on the easel Trial Exhibit 30166, which is entitled the "Nurses Health Study." Can you tell us from this exhibit what factors were controlled for?
A. In the fully adjusted risk estimate --
MR. BIERSTEKER: Objection. Objection, Your Honor. This is cumulative, I think.
MR. HAMLIN: I don't think so, Your Honor.
MR. BIERSTEKER: He testified to it on direct.
THE COURT: Well you asked him questions on cross. I think he can redirect it.
BY MR. HAMLIN:
Q. Can you tell us what factors were controlled for in the nurses health study?
A. In calculating the adjusted risk estimate from the right-hand column, the factors are those listed

after the asterisk at the bottom: age, time period, Quetelet's index -- which is a measure of weight -- menopausal status, hormone replacement therapy, family history of myocardial infarction, personal history of diabetes, personal history of hypertension, personal history of high cholesterol.
Q. And what was the effect of controlling for these factors in the nurses health study?
A. In comparing the two columns of risk estimates, the estimates were not appreciably changed by including these additional factors, and to the extent there was a change in each range of cigarette smoking, the adjusted risk estimates went up.
Q. And what if anything do you -- can you conclude from this regarding factors to be included in plaintiffs' statistical model?
A. Well that again this study is consistent with our reliance on Dr. Samet and his foundation and with a summary statement in the Surgeon General's report, both of which indicate that it's not necessary, with the exception of age I would say, to include these factors in the model.
Q. And what if any investigation did you do of

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

alcohol and exercise with respect to the data used in plaintiffs' statistical model?

A. We did do an investigation using the Behavioral Risk Factor Survey on the extent to which including age -- excuse me -- exercise or alcohol moved the effect of smoking on use of medical services and did not find that there was any appreciable effect.
Q. Now I'm placing on the easel Trial Exhibit 30203. Would you identify that exhibit for the jury, please.
A. That's one we looked at yesterday called "State Expenditures Attributable to Smoking by Disease Category, Full Model 1978 to 1996."
Q. Now how much is the smoking-attributable expenditure for nursing home fees?
A. Two hundred sixty million dollars.
Q. And what percentage is this smoking-attributable expenditure of the total dollars spent on nursing homes?
A. Three percent.
Q. And is that what the plaintiffs are asking for in this case?
A. Well that's what our model estimated.
Q. And can you tell us what if anything is significant about that percentage.
A. Well it's certainly not a very high percentage, certainly way below that of lung cancer. And one

thing that reflects is that there are many reasons for going into the nursing home that don't really have anything to do with smoking.
Q. Now Dr. Wyant, is it standard practice in your profession to keep all preliminary work when working on models such as this?
A. You would drown if you did that, I think. It's certainly not customary practice.
Q. Have you seen any drafts of preliminary work from the defendants' experts?
A. No.
Q. I'm now placing on the easel Trial Exhibit 30189. Can you identify that exhibit, please.
A. That's the comparison of core model to refined model, the cost for major smoking-attributable diseases.
Q. Now what if any confidence does this comparison give you in the refined estimates or smoking-attributable expenditures for the state of Minnesota and Blue Cross Blue Shield Minnesota?
A. Well it increases my confidence. They're both reasonable methods. They come out close to each other. And even though one difference is that in the core model, for example, the third reduction comes from the claims data, and the refined model from the

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

National Medical Expenditure Survey. Despite using different data sources, again, both of which are reasonable again, you don't get a very big difference in the total estimates from the core side to the refined side.

MR. HAMLIN: I have no further -- (clearing throat) excuse me. I have no further questions, Your Honor.

Your Honor, I would like, however, to do one thing that I should do for the record, and that is simply to offer the illustrative exhibits prepared by Dr. Wyant which I have previously marked. If I could just run through those for the record.

Plaintiffs would offer Trial Exhibit 25054, 25055, 25056, 25057, 25058, 25059, 25060, 25061, 25062, 25063, 25064 and 25065 for illustrative purposes.

MR. BIERSTEKER: No objection.

THE COURT: Court will receive 25054 through '65 for illustrative purposes.

MR. BIERSTEKER: Thank you, Your Honor.

RECROSS-EXAMINATION

BY MR. BIERSTEKER:

Q. Doctor, neither of those 94-year-old women were in the nursing home because of a stroke; were they?

MR. HAMLIN: Objection, beyond the scope of redirect.

THE COURT: Sustained.

Q. Doctor, you spoke about confidence in the redirect. Isn't that what confidence levels and confidence intervals are all about?

A. It's one thing they're meant to address, but confidence in that context is a term of art. It means something specific in statistics about repetitions of hypothetical surveys.

Q. Doctor, the Framingham Medicare article, do you remember that one?

A. Yes.

Q. And that one looked at costs associated with smoking; right?

A. Among other things, yes.

Q. And was that a cost study or a damage study?

A. That was a cost study.

Q. And that one used the 95 percent confidence level; right?

A. Yes, they did report 95 percent confidence intervals.

Q. Doctor, you relied on Dr. Samet for many of your opinions in this case; correct?

A. That's true.

Q. And he was a team member and he provided the foundation for your model; is that right?

A. That's correct.

Q. Let me read one question and answer from Dr.

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lsgd0001

Samet's testimony on direct examination. And counsel, this is found at trial transcript 3482, lines nine through 19.

MR. HAMLIN: Your Honor, I believe this is improper use of testimony.

THE COURT: Sustained.

Q. Doctor, do you know whether --

MR. HAMLIN: I think we just sustained it; right?

MR. BIERSTEKER: I -- I'm not reading it.

MR. HAMLIN: Oh, okay.

MR. BIERSTEKER: I'm asking a question.

MR. HAMLIN: I'm sorry.

BY MR. BIERSTEKER:

Q. Do you know whether Dr. Samet --

Did Dr. Samet ever express the view to you that what you want to do is to have the data lined up in piles of like to like, differing only in the effects of the factor that you're studying - smoking?

A. That's certainly a general theme in epidemiology and statistics. I suppose in a sense we talked about

it. I can't -- I don't remember if that exact phrasing was used at some time.

MR. BIERSTEKER: That's fine. Your Honor, I have no further questions.

MR. HAMLIN: I have nothing, Your Honor.

THE COURT: You may step down.

(Witness excused.)

THE COURT: Do you have a 15-minute witness, counsel?

(Laughter.)

MR. CIRESI: I guess I could go up on the stand, Your Honor.

No, we don't.

THE COURT: I think we're going to recess.

MR. CIRESI: We have just a deposition that we should start Monday.

THE COURT: All right. We'll recess, reconvene Monday at 9:30.

One short reminder: Do not read the newspaper, magazine, listen to the radio, watch TV, talk to your neighbors, your wives, your husbands, your friends, your enemies, about the case. Okay?

Court will recess.

THE CLERK: Court stands in recess.

(Recess taken.)

http://legacy.library.ucsf.edu/tid/gfm05a00/pdf
Digitized by the Legacy Industry Documents Library - https://www.industrydocuments.ucsf.edu/docs/lsgd0001